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Area of Ct. A. 9,349,000


Population 88,036,789.

Area of Illinois 56,650.

Population in (1890) 3,826,851

Yale college New Haven Conn

Harvard. Cambridge Mass



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GEOGRAPHY

BY THE

BRACE SYSTEM,

of Geography

OR

How to Study Geography.

North America.

Prepared for the Use of Teacher and Pupil

BY

COUNTY SUP'T JOHN M. BOYER

AND

JOHN F. WICKS.

CHICAGO :

A. FLANAGAN, PUBLISHER.

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NORTH AMERICA.

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NORTH AMERICA.

North America

1. Boundary, area and population.
2. Coast lines—Directions, regularity, indentations and projections.
3. Surface, mountains, plateaus and plains.
4. Oceans, seas, gulfs and bays.
5. Lakes, salt and fresh water.
6. Rivers.
7. Islands.
8. Climate.
9. Productions { Animal.
Vegetable.
Mineral.
10. Political Divisions.
11. Cities.
12. Races of people.
13. Occupations.
14. National wonders.

North America is a great peninsula and forms the northern and larger part of the continent of America.

The extremities are	{	North—Cape Barrow, $71^{\circ} 24'$ N. Lat.
		East—St. John's, New Foundland, $52^{\circ} 3'$ W. Long.
		South—Isthmus of Panama, $9^{\circ} 40'$ N. Lat.
		West—Isle of Attoo, $187^{\circ} 34'$ W. Long.

On account of its more salubrious climate, its larger population, its greater wealth of all kinds, and its higher civilization it is much the more important of the two Americas.

The fact that it is our home country lends an additional interest to its study. We should *know thoroughly* the geography of our own country and the *principal* facts about other lands.

The "block method" spoken of on p. 10 of Vol. I can be profitably used by pupils in written work in bounding the countries mentioned in this volume.

Call the attention of the pupils to the general shape of the different continents. Lead them to see that North America agrees with the other continents in having a triangular shape. Lead them also to find the cause of the longest side being on the west in each of the Americas.

Compare the two Americas in size, shape, indentations, rivers, lakes and climate.

In extent the length of N. America is about 5,000 miles, and its greatest width is about 3,000 miles. Its area 9,349,000 square miles, comprises about one-sixth of the dry land on earth.

The pupils should be required to learn to name and lo-

cate the principal natural features, as lakes, rivers, etc., in the order given in the outline above. Only the important should be taken up *now* as we soon begin the study of each of its political divisions in *detail*.

Lead the pupils to see that the principal part of North America is in the temperate zone, while the most of South America is in the torrid zone. Teach them of the influence of the ocean currents on the climate of the east and west coasts of North America, also the reason for the sterility of the great Rocky Mountain plateau, and for the slight rainfall on the Pacific slope.

While the animal and vegetable growths are not so luxuriant as in South America, the mineral wealth is far greater. North America possesses every variety of soil, and great plains of the most fertile character, so that agriculture is carried on extensively and profitably by the larger number of the inhabitants. Manufacturing, mining and commerce are next in importance.

Lead the pupils to see that the people who settled near the oceans and lakes naturally engaged in fishing, ship-building, manufacturing and commerce; those who settled in the forests engaged in hunting, trapping and lumbering; those on the prairies to tilling the soil, and those in the mountain regions to grazing, dairying, quarrying and mining.

The following little outline clipped from a school journal may be useful:

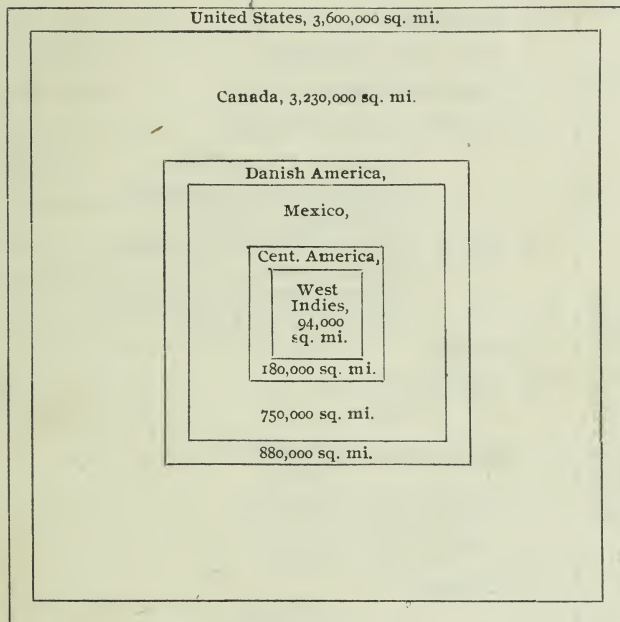
Occupations.	Of people living on the coast.	{ Fishing. Commerce. Ship-building. Manufact'ing.
	Of people living in a mountainous region.	{ Quarrying. Mining. Grazing. Dairying. Manufact'ing.
	Of people living in a prairie country.	{ Agriculture Grazing. Stock raising. Commerce.
	Of people living in a forest.	{ Hunting. Trapping. Lumbering.

Day by day review interesting historical facts associated with the places studied.

Have the pupils learn the characteristics of the principal classes of people inhabiting the different parts of North America.

COUNTRIES OF NORTH AMERICA.

COMPARATIVE SIZE SHOWN BY DIAGRAM.



The pupils should be required occasionally to show the comparative size of the individual members of a group of states by the construction of similar diagrams.

UNITED STATES.

United States, 1789.

1. Boundary.
2. Area and population.
3. Gulfs and bays.
4. Peninsulas and islands.
5. Relief. { Atlantic Coast Plain.
Appalachian Highlands.
Mississippi Valley.
Rocky Mountain System.
Great Basin.
Sierra Nevada Mountains.
Pacific Coast Plain.
6. Rivers.
7. Lakes. { Fresh.
Salt.
8. No. of States { At First.
Now.
9. Number of Territories.
10. Form of Government.
11. Climate.
12. Productions. { Animal.
Vegetable.
Mineral.
Manufactured.
13. Occupations.
14. Education. { Common Schools.
Higher.
15. Natural Wonders.
16. Religion.

The United States is a federal republic situated between 25° and 49° N. Lat., and (exclusive of Alaska) between 67° and 124° W. Long. Its greatest length from east to west is a little less than 3,000 miles and the greatest breadth is about 1,600 miles. It is the largest and most important of the divisions of North America.

Its extent over 24° of latitude and its varied relief forms give it an almost unlimited variety of climate and productions.

The Atlantic Coast Plain ranges from 50 to 200 miles in width, occupied mostly by the "Original Thirteen." The northern half of this plain is tolerably fertile.

The Appalachian Mountain system is noted for its coal and iron mines and its forests. It comprises the following ranges and clusters—Alleghany, Blue Ridge, Catskill, Green and White Mountains.

The Mississippi Valley is the largest and one of the most fertile plains in the world. It is said to be capable of sustaining a population of 500,000,000 persons.

In the quantity and quality of the food products of this fruitful region, this Mississippi Valley is without a successful rival.

West of the Mississippi River the land gradually rises and diminishes in productiveness until we reach the Rocky Mountains—the backbone of North America. This mountain system has a base of over 1,000 miles in width, over which trend numerous ranges, all of which are in some way connected so that they form a comparatively unified whole.

Many of the peaks tower above the snow line, below which they are clothed with forests of fir, pine and many varieties of deciduous trees.

The scenery in many portions is noted either for its picturesque beauty or sublime grandeur.

Among the places much visited and praised by tourists may be mentioned the Yellowstone National, North, Middle, South and San Luis Parks; Colorado, Arkansas, Willams,' Engleman's, Queen's, De Challez, Cheyenne, Cataract and Red canyons, each possessing a beauty peculiar to itself; Idaho, Colorado, Manitou, Cottonwood, Salida, Poncho, Deansburg, Soda, Heywood, Morrison and Hartsell Hot Springs; San Luis, Yellowstone, Twin, South Park Salt, Palmer's, Green, Trout, Heart, Shoshone, Lewis, Madison, Jackson's and Fremont's Springs; Upper and Lower Yellowstone Falls, Seven Falls and Fountain Cascade; Cave of the Winds; Garden of the Gods; Glen Eyrie, Austin's Glen, Blair Athol, Royal Gorge, Durango Cave Dwellings and Aztec Ruins, the Holbrook Petrified Forest, the numerous geysers of Yellowstone National Park and some of the more prominent peaks, especially Pike's Peak.

The mineral wealth of this region is very great. The most important are gold, silver, coal, iron and copper.

The Great Basin lying between the Rocky Mountain system and the Sierra Nevada Mountains is a high and comparatively unproductive region. In some places, however, where local irrigation is utilized, good crops are produced.

The characteristics of the Sierra Nevada Mountains and the Pacific Slope may be found under the topic California.

Lead the pupils to see that the direction of the rivers (and *many other things!*) depend upon the relief of a country. Let the pupils write the names of the important rivers in five lists, as follows:

1. Those flowing into the Atlantic.
2. Those flowing directly into the Gulf of Mexico.
3. The tributaries of the Mississippi.
4. Those flowing into the Pacific Ocean.
5. All other rivers.

The government is a republic, i. e., the people choose, at regular intervals, the persons whose duty it becomes to make, execute or explain the law as the case may be. The government is thus naturally divided into three principal branches, as follows:

Federal Republic.	{	Legislative.	{ Senate. House of Representatives.
		Executive.	{ President and subordinates.
		Judicial.	{ Supreme Court and inferior courts.

The government of each state is similar in character.

The climate of the United States is temperate, but not so mild as that of the old world in the same latitudes. The influence of the Japan current upon the climate of the Pacific Slope should be noted.

The pupils can with little or no help make a list in outline form of at least ten of each of the kinds of productions.

The principal occupations should be named, the places of their greatest activity located, and the reason given for a specified occupation being carried on in a particular locality. It would be well to have the pupils make a list of some of the important inventions, and to name the occupations that have arisen because of said inventions.

Under Education, teach the pupils how the common schools are supported and something of the machinery of school government.

The various kinds of schools devoted to higher and special education should be named and briefly described.

The following universities, colleges and seminaries should be located: Yale, Harvard, Bowdoin, Williams, Holyoke, Vassar, Cornell, Princeton, John Hopkins, Ann Arbor, Leland Stanford, Jr.

The principal natural wonders should be named and located; their description can be taken up under the respective states.

The great blessings of a fertile soil, a congenial climate, rich mines, extensive and valuable forests, many navigable rivers and commodious and safe harbors, beautiful lakes, grand scenery, free schools, freedom in religion, and of the republican form of government which we in the United States enjoy, should all be brought vividly before the pupils' minds.

NEW ENGLAND STATES.

MAINE

"Foxes."	{	Position.
		Boundary.
		Size and population compared with <i>your</i> state.]
		Atlantic Ocean.
"Pine Tree State."	{	Lakes. { Grand. Chesuncook. Moosehead. Umbagog.
		Rivers. { St. John. St. Croix. Penobscot. Kennebec. Androscoggin.
1820.	{	Bays. { Passamaquoddy. Frenchman's. Penobscot. Casco.
Me.	{	Islands. { Moose. Mt. Desert. Isles of Shoals.
		Mountains. { Mars Hill. Katahdin. Saddleback.

Maine.	{	Cities.	{	Augusta.
				Portland.
				Bangor.
				Lewiston.
				Bath.
				Rockland.
				Eastport.
		Principal industries.	{	Lumbering.
				Ship building.
				Manufacturing.
				Fisheries.
				Agriculture.

NOTE:—To the left of the brace is found 1st the abbreviation of the State; 2nd, the date of admission as a State; 3rd, the nickname of the State; 4th, the nickname of the people.

KEY WORDS.

1. Bowdoin.
2. New Sweden.
3. Alewives.
4. "100 Harbored Maine."
5. "Thunder Cave."
6. "Schooner Head."
7. "The Plumed Knight."
8. Ice Harvests.
9. Gum Gathering.
10. Menhaden.
11. "The Lumber State."
12. "Down-easters."
13. Webster—Ashburton Treaty.
14. "Jumping-off place."

QUERIES.

1. Who named New England?
2. What is the meaning of Chesuncook? Passamaquoddy? Androscoggin? Bangor? Casco? Katahdin? Kennebec? Penobscot? Piscataqua? Umbagog?
3. With what State was Maine connected until 1820?
4. What city is the outlet for the commerce of the Great Lakes in the winter season?
5. Who are Maine's most noted authors?
6. What city is the second lumber market in the United States?
7. What is the eastern terminus of the Grand Trunk Railway?
8. Which city of Maine is noted for its sardine industry?
9. What is the Motto of Maine?
10. Who founded the Youth's Companion?
11. What Indians still live in Maine?
12. Why is there so great a difference between the climate of Northern and Southern Maine?

ITEMS OF INTEREST.

Maine, the most north-eastern of the United States, has an area about equal to the rest of New England. It has immense forests of valuable woods; extensive and excellent quarries of good building stone; 2500 miles of sea coast with numerous good harbors; a great many lakes teeming with trout, salmon and other fish; an abundance of water power in its rivers, and valuable fisheries along its coast. The

short summers hinder agriculture somewhat, but the hardiest cereals and fruits are cultivated with profit.

Maine is midway between the Equator and the North Pole. It contains 1,700 lakes over one mile in area, besides many smaller ones.

EASTPORT.

Eastport, situated on Moose Island in Passamaquoddy Bay, is the most eastern town in the United States. It is connected with the mainland by a bridge. The city enjoys an extensive commerce with the neighboring British provinces. Owing to high tides its harbor, a good one, is never filled with ice. Fort Sullivan, situated on a prominence, defends the harbor.

BANGOR.

Bangor, at the head of navigation on the Penobscot, is one of the leading lumber markets of the United States. It is built on both banks of the Kenduskeag, which affords abundant water power that is utilized by numerous mills and factories. Power for the water works and also for manufacturing purposes, is secured by the erection of an immense and costly dam across the Penobscot just above the city.

ROCKLAND.

Rockland, noted for the manufacture and exportation of lime, excellent building granite, and for its ship building, is on the west shore of Penobscot Bay, about ten miles

from the ocean. It has a good harbor. Granite for the postoffices in New York and Cincinnati and for the St. Louis custom house was quarried here.

BATH.

Bath, on the Kennebec River, a short distance from the ocean, is noted for its excellent harbor and for its extensive ship building.

AUGUSTA.

Augusta, the capital of Maine, on the right bank of the Kennebec, is at the head of sea navigation. It has a beautiful state house built of white granite. The manufacture of lumber is the most important industry.

LEWISTON.

Lewiston, on the Androscoggin, opposite Auburn, is an important manufacturing center. The falls in the river furnish the power by which many cotton and woolen mills are operated.

PORTLAND.

Portland, the metropolis and principal commercial city of Maine, is built principally upon a peninsula that juts eastwardly into Casco Bay. It has a safe and capacious harbor, the entrances to which are guarded by several forts.

The canned provision trade and the manufacture of lumber and the various products of the foundry and machine shops are the principal industries.

Capt. John Smith made the first summer trip to this region in 1614.

He described Casco Bay as "full of many great isles and harbors." It is said to contain more islands than any other like space in the United States.

In 1866, July 4th, a fire cracker started a fire which burned a space one and one-half by one and one-quarter miles square, 100,000 people were homeless and \$10,000,000 of property was destroyed.

Here H. W. Longfellow, N. P. Willis and "Fanny Fern" were born.

The Youth's Companion was first started in Portland.

ANIMALS.

The immense forests afford homes for the moose and caribou, deer, bear, wolf, catamount, coons, squirrels, beaver, sable, weasel and other wild animals.

The birds are eagles, geese, ducks, hawks, owls, quails, etc.

The salt water fish are chiefly cod, mackerel, herring; the rivers and lakes contain salmon, trout, and pickerel.

Maine does not lead in the production of lumber as formerly, but she still cuts, saws, and sells laths, shingles, clapboards, (shooks,) palings, scantlings, boards, planks, ship timber, furniture and chair stock, carriage material and such like.

Maine produces more lime than any other state except New York.

NEW HAMPSHIRE.

“The Switzerland of
America.”
“Granite Boys.”

New Hampshire,
1788.

Position.

Boundary.

Size and population compared with your own state.

Atlantic Ocean.

Lakes. { Winnipiseogee.
Connecticut.

Rivers. { Connecticut.
Merrimac.
Piscataqua.

Mount'ns { White.
Mt. Washington.

Cities. { Concord.
Manchester.
Nashua.
Portsmouth.
Keene.
Dover—1623.

Principal Industries. { Manufacturing.
Agriculture.

Products. Name 10.

SUGGESTIVE KEY WORDS.

15. Dartmouth.
16. Hannah Dustin's Island.
17. Old Man of the Mountain.
18. Old Man's Washbowl.
19. Lacoma.
20. Tip Top House.
21. The President's Range.

22. The Flume.

23. The Observatory.

QUERIES.

13. Why was the state so named?

14. What president was a native of New Hampshire?

15. What is the meaning of Winnipiseogee? Relate the story of Hannah Dustin.

16. In what wars did the people of New Hampshire particularly suffer?

17. What Indians once lived in this state?

18. What writer makes a summer resort of the Isles of Shoals?

19. Who wrote many stories about the White Mountains?

20. What great lexicographer born in New Hampshire?

21. How many miles of seacoast has New Hampshire?

22. What Indian legend connected with Mt. Washington?

ITEMS OF INTEREST.

New Hampshire, one of the "original thirteen," is too mountainous in most parts for agriculture: however, in the valleys and in the southern part it is conducted with profit. The great business of this state is manufacturing. The swiftly flowing rivers afford abundant water power. Besides one president, Daniel Webster, Salmon P. Chase and Horace Greeley were sons of New Hampshire.

PORTSMOUTH.

Portsmouth, the only seaport of New Hampshire, has a

safe harbor large enough to accommodate 2,000 ships. Even at low tide the water is deep enough for the largest vessels. The swiftly outflowing tides keep the harbor free from ice or sediment.

The first warship (the *North America*) launched in American waters was built here.

A United States navy yard is established on Navy Island opposite Portsmouth, within the limits of Kittery, Maine.

CONCORD.

Concord, the capital of New Hampshire, on the Merrimac, has important manufactories of woven fabrics and carriages, and some excellent quarries of granite.

MANCHESTER.

Manchester, the metropolis of New Hampshire, is built on both sides of the Merrimac River, about 18 miles south of Concord. The Amoskeag Falls, 47 feet in height, furnish the power by which the great cotton and woolen mills are operated. The manufacture of steam engines, both stationary and locomotive, is an important industry.

NASHUA.

This is also an extensive manufacturing town. The water power is derived from the Mine Falls, in the Nashua River, whence the water is conducted in a canal 3 miles in length. The fall of the water is about 36 feet. Besides the cotton and woolen factories, it has extensive iron works and manufactures edged tools.

WHITE MOUNTAINS.

The White Mountains consist of about 200 peaks in two principal groups on a plateau about 30 by 45 miles in extent, lying north of the center of New Hampshire. Of these peaks Mt. Washington is the highest, being 6,293 above the sea level.

On Mt. Washington a carriage road has been built to the summit on the east side and a railroad on the west. There are several buildings at the summit; among them is one used as a meteorological station by the United States signal service. The grand and picturesque scenery of this region attracts many tourists every summer. The railroad is three miles in length, and has a rise of over 3,600 feet.

The steepest grade is 1980 feet to one mile. The time occupied in making a round trip is about one and one-half hours.

In addition to the ordinary rails for the road, is a third one between the others, a cog rail, in which works the strong cog wheel of the locomotive, which pushes one car ahead of it. There are brakes strong enough to hold the car on any portion of the track. No accidents of a serious nature have ever happened on this road.

It is said that 15,000 people visit Mt. Washington every year.

The Summit House is a large hotel.

For three months of the year, the Tip-Top House prints a daily paper called "Among the Clouds."

The temperature on this peak is very changeable; for instance, on the 5th of February, 1871, a party of scientific men recorded 59° Fahr. below zero, and two days later the thermometer registered 62° above. Summer tourists are sometimes caught in severe snow storms on these mountains.

MERRIMAC RIVER.

The Merrimac River is especially noted for its manufactories. This river turns more spindles than any other in the world. One town alone makes cotton cloth enough to reach three times around the earth. A cotton factory is a very interesting place to visit.

The cotton comes to the factory in bales. "In the spinning room it is made into thread by the spinning jenny. In the weaving room are long rows of looms in which the cloth is woven. The spindles turn, the looms move, the shuttles fly back and forth to form the web, without a hand to touch them when once set in motion. If a thread breaks, the machinery stops itself until the thread is mended.

It is not an unusual sight of an evening to see 1,000 people, mostly boys and girls, leave a single factory.

THE FIRST STRIKE.

The first strike in America of which we have a record occurred at Dover, in 1827.

Some oppressive act aroused the factory girls. They struck, and paraded the town with a band and an American flag. The mill owners quickly came to time.

FORESTS.

The principal forests are in the northern part and afford much timber, firewood, charcoal, maple sugar and tanners' bark.

The hard wood is used for furniture and wooden-ware makers' use.

AGRICULTURE.

Wheat, oats, rye, barley, corn and potatoes are produced. Hay is the most important crop of this state.

Fruit raising is very profitable.

The state offers encouragement to actual settlers on the abandoned lands. Dairy farming is profitable—milk is shipped by rail to the Boston market.

MINERALS.

Granite is extensively quarried in many places; it is used principally for building purposes.

There is a fine soapstone quarry at Frankestown.

Some of the largest beryls ever known were found in New Hampshire.

Iron ore is found in paying quantities. Tin, lead, gold, silver, zinc, mica and graphite are found here.

LITERARY MEN.

T. B. Aldrich—Poet.

Edward Bellamy—Novelist.

J. E. Worcester—Lexicographer.

B. P. Shillaber—(Mrs. Partington) Humorist.

Horace Greeley—Journalist.
 Charles E. Coffin—Journalist.
 Hosea Ballou—Religious Writer
 S. G. Drake—Historian.
 J. T. Fields—Essayist.
 Thos. W. Knox—Journalist.
 Daniel Webster—Statesman.
 Celia Thaxter.
 Edna Dean Proctor.

VERMONT.

"Green Mountain State." "Green Mountain Boys." Vt. 1791.	}	Position.	
		Boundary.	
		Lakes.	{ Champlain. Memphremagog.
		Rivers.	{ Connecticut. Winooski. Otter Creek.
		Mountains.	{ Green. Mt. Mansfield. Killington Peak.
		Cities.	{ Burlington. Montpelier. Rutland. St. Johnsbury. Bennington.
		Products.	{ Animal 10. Vegetable 5. Mineral 5.
		Occupations.	{ Agricultural. Grazing. Mining. Manufacturing.

KEY WORDS.

- 24. Runaway Pond.
- 25. Ethan Allen.
- 26. Camel's Hump.
- 27. Bellow's Falls.
- 28. "Queen City of Vermont."
- 29. "The Beech Seal."
- 30. Sugar Camps."
- 31. Stone Quarries.

QUERIES.

- 23. To what State does the Connecticut River belong?
- 24. What is marble?
- 25. What city is noted for the manufacture of weighing scales?
- 26. In what does Vermont excel all other States?
- 27. What kind of fences are found in this State?
- 28. What town in Vermont was raided by the Confederates in 1864?
- 29. How is stone sawed?
- 30. How many cities in Vermont?
- 31. What is a city?
- 32. How much did Vermont pay for herself?

ITEMS OF INTEREST.

The mountainous parts of Vermont are valuable for their forests of trees, useful for lumber, fuel, tanner's bark, maple sugar, etc., for luxuriant pasturage on their slopes, and for

their mineral wealth, consisting of excellent marble, ranging in color from pure white to black; iron, copper, building slate, potter's clay and mineral springs of medicinal value.

It has a number of beautiful lakes, and the rivers, though small, have a number of picturesque falls, and furnish considerable water power that is utilized in manufacturing a great variety of goods.

Many valuable farms occupy the valleys and the western slopes of the lower mountain ranges. This State excels all others in the quantity and excellence of its maple syrup and sugar. Vermont is also noted for its highly reputed dairy products.

CITIES.

Burlington, the metropolis of Vermont, and one of the most important lumber markets in the United States, is beautifully situated on the eastern shore of Lake Champlain, near the outlet of the Winooski river. It is built on a slope, reaching from the water's edge to the top of an eminence 300 feet high. Upon this eminence is situated the University of Vermont that was established the same year that Vermont was admitted to the United States. From this eminence one can obtain a view that is rarely equalled for its picturesque beauty. Looking westward one can see the whole city, the lake with numerous islands, and the Adirondacks in the distance. The city has an excellent harbor.

Montpelier, the capital, is a small town on the Winooski river.

Rutland, an important town on Otter Creek, is noted for the extensive quarries of superior white marble near it.

Bennington is noted for the scene of Gen. Starks' victory over the British. A monument now marks the battle ground. It also contains manufactories of porcelain and Parian ware.

One of the most beautiful natural panoramas of the United States is presented to the view of the spectator from the summit of the Vermont University at Burlington.

Lake Champlain is 600 feet deep and covers an area of 600 square miles. The bottom of this lake is several hundred feet below the level of the sea.

MAPLE SUGAR.

Vermont produces about one-third of the annual maple sugar crop of the United States. The average crop is about 12,000,000 pounds.

The rock or sugar maple tree (*Acer Saccharinum*) is usually not as highly prized as its many merits deserve. Its symmetrical form, dense shade, and its great beauty when arrayed in the glory of its royal autumnal robes combine to make it one of the most desirable of shade trees. Its wood, next to hickory, is the most valuable for fuel, and for charcoal it is unexcelled. The wood being very hard and often having a curiously twisted grain, makes it valuable for furniture and interior finishing.

The sugar season comes in the early spring, sometimes as

early as February. When frosty nights are followed by sunny, thawing days, the sap runs the most freely.

An auger hole is made in the tree a few feet from the ground and a tube is inserted in the hole to convey the sap to a bucket attached to the tree to receive the sweet fluid. The sap is collected usually in a tank hauled upon a wagon or sled and conveyed to the sap house where it is boiled down to syrup or sugar as desired. Much of the Vermont sugar is used for home consumption. The people there use it to put in their coffee and to sweeten their cakes and pies. "Sugaring off" is the important epoch in sugar making, it is the completion of the process of reducing the sap to sugar, and cannot successfully be accomplished except by the most experienced and skillful makers. A "sugaring bee," a young folks party, often attends a "sugaring off." The boys and girls of the neighborhood are invited and have a jolly time in all sorts of games, and in eating great quantities of the newly made sugar.

The demand for maple syrup and sugar is so great that it is often adulterated. Very little pure maple syrup and sugar is to be obtained far from where it is made.

MASSACHUSETTS.

"The Bay State." "Bluebells." Massachusetts, 1788.	Boundary.	
	Atlantic Ocean.	
	Bays.	{ Cape Cod. { Massachusetts. { Buzzards.
	Rivers.	{ Connecticut. { Merrimac. { Housatonic.
	Capes.	{ Ann. { Cod.
	Islands.	{ Nantucket. { Martha's Vineyard { Elizabeth Islands.
	Mount- ains.	{ Hoosac. { Mt. Tom. { Mt. Holyoke.
	Cities.	{ Boston. { Lowell. { Lawrence. { Lynn. { Salem. { Cambridge. { Plymouth. { Worcester. { Springfield. { Holyoke.
	Manufactured Products.	{ Cotton Goods. { Woolen " { Boots and Shoes. { Leather. { Paper. { Ironware. { Machinery. { Etc., etc.

KEY WORDS.

32. "City of Notions."
33. Norman's Woe.
34. "The Paper City."
35. Suez of America.
36. The Hub.
37. Cradle of Liberty.
38. "The City of Spindles."
39. Oldest Town.
40. The Neck.
41. Bunker Hill Monument.
42. Cape Cod Ship Canal.
43. Harvard.
44. Forefather's rock.
45. "The Granite city."
46. Hoosac Tunnel.

QUERIES.

33. Of what use are the lowlands of Cape Cod peninsula?
34. What became of the Boston Elm? Tell its story.
35. Where is there a noted school of natural science located?
36. What is "The Literary City of New England?"
37. Who were the Puritans? The Pilgrims?
38. What city is noted for the manufacture of wire? Boots and shoes?
39. What is the chief fishing port of the United States?

40. Where is the largest leather market in United States?
Largest watch factory?

41. What Presidents has Massachusetts furnished? What poets? Literary men?

42. How is the landing place of the Pilgrims marked?

43. Which city prohibited theaters for twenty-five years?

44. Where is the oldest house in the United States?

45. Where is there a rock thirty to forty tons weight that can be moved with your hand?

46. The citizens of what place have a peculiar dialect of their own?

47. Massachusetts boasts the second largest city not on navigable waters. Name the city.

48. What city is called "The Manchester of America?"

49. Are whales ever found in the waters off the North-east coast?

50. Where and when was the first state normal school established in the United States?

ITEMS OF INTEREST.

At Stockbridge, Mass., is a place called the Ice Hole, where ice is found for the whole year. It is a narrow and deep ravine of great wildness, where the snow and ice accumulate to such a depth as to remain throughout the entire year.

King Phillip's head stood upon a pole at Weymouth, Mass., until its wooden support rotted off. Read your histories for a full account of King Phillip's War. How

he marked his route? What became of his wife and children? How he was killed?

The first tunneling machine was used upon the Hoosac tunnel in 1851. This tunnel is 24,416 feet in length, and passes entirely through the Hossac Mountains in Massachusetts, on the Boston and Albany railroad.

Southbridge, Mass., has the largest spectacle factory in the world. More than three-fourths of the gold spectacles and eye-glasses made in this country are made in Southbridge, one company alone in that town having turned out 1,500,000 pairs last year.

NEW BEDFORD.

Counting the number of citizens, this town is perhaps the richest city in the United States. For fifty years past, its inhabitants have done half of the world's whale fishing. Most of the whalebone, whale and sperm oils comes from this port. Of late years, petroleum and cotton seed oil have caused this industry to decline. New Bedford can boast of one of the largest cotton factories in the world—The Wamsutta Mills.

SPRINGFIELD.

Springfield is situated on the Connecticut river in Western Massachusetts. It is noted for its fine buildings, library and manufactories. One of the principal features is the United States Arsenal. The grounds contain seventy-two acres of land surrounded by an iron fence.

The Springfield rifles are widely known.

Fire arms, cartridges, jewelery, railroad cars, buttons, paper collars, sewing machine needles, slippers, rubber goods, thimbles, spectacles, envelopes, and numerous other articles are manufactured here.

Headquarters for Webster's dictionaries, and Milton, Bradley Co., toy and kindergarten supplies are located here.

HAVERHILL.

Haverhill was named from the English town of the same name by Rev. John Ward in 1640. Many times the settlement suffered from Indian attacks.

It is now noted for it's boot, shoe, and hat industries. It is the birth place of the "Quaker Poet," John G. Whittier.

The scene of "Snow Bound," is visited by many every year.

WORCESTER.

Worcester is located in one of the richest regions of New England. It is the second city in population in Massachusetts. It is the seat of one of the five State Normal Schools, Military Academy, Worcester Academy, College of the Holy Cross, a Polytechnic School and Clark's University. It is sometimes known as the "Academic City." "Heart of the commonwealth" is given to it owing to its center location, and political importance. It's public library is one of the best in the United States.

MINOT'S LEDGE LIGHTHOUSE.

This lighthouse was built, by an appropriation of Congress in 1847.

It is octagonal in shape and 25 feet in diameter and is located over one mile from the land. In 1851 a terrific Atlantic storm totally destroyed this lighthouse, twisting off iron piles 10 inches in diameter.

Congress again rebuilt this structure more strongly than ever, completing it in 1860.

The granite tower stands 88 feet high, 30 feet in diameter at the base.

There are over 1000 light houses and lighted beacons under government control on the coasts of the United States, besides many bell and whistling buoys, and fog signals operated by steam, hot air and clock work.

The United States has 10,000 miles of lighted sea and lake coast, exclusive of river lights.

GLOUCESTER.

Gloucester, the largest fishing port of the United States, is situated on the peninsula of Cape Ann, about thirty miles northeast of Boston. About 5,000 men and over 420 vessels are employed in the fisheries.

It is also a noted summer resort, and is supplied with excellent hotels and boarding houses. Coffin's beach, which is about two miles in length, is one of the finest on the Atlantic Coast.

An excellent quality of granite is quarried and shipped from Gloucester.

How should you pronounce Gloucester?

We think Whittier had Gloucester in mind when he wrote:

“There we'll drop our lines, and gather
Old Ocean's Treasures in,
Where'er the mottled mackerel
Turns up a steel-dark fin;
The sea's our field of harvest,
Its scaly tribes our grain,
We'll reap the teeming waters
As at home they reap the plain.”

QUINCY.

Quincy is picturesquely located near Quincy Bay, about eight miles south and east of Boston. It has long been famous for the excellent quality of the building granite furnished by its extensive quarries. The first quarry was opened in 1825 to get the material for building the Bunker Hill monument. In order to convey this stone from the quarry to the water's edge, a railroad four miles in length (including branches) was constructed in 1826. The sleepers, or ties as we call them, were made of stone, and laid 8 feet apart; the rails were made of wood six inches thick and covered with strap iron $\frac{1}{4}$ of an inch thick. This was the first railroad built on the western continent.

The Adams Academy, a classical preparatory school, stands upon the site of the birth place of John Hancock, once governor of Massachusetts.

Quincy was also the birth place and home of Presidents

John Adams and John Quincy Adams. The town was originally called Braintree.

HOW BANK NOTES ARE MADE.

Everyone may not know that the government money is printed on paper made in Dalton, Mass., in a mill that existed in colonial times. As the grayish pulp passes between heavy iron rollers, bits of red and blue silk are scattered over its surface. From the pulp room to the vault, where it is stored until shipped to Washington, it is guarded and watched as though it was gold.

In small iron safes, like those used by the express companies, the paper is carried where it is used or stored away until needed.

More than 1,000 persons are employed in the bureau of printing and engraving, in wetting, plate-printing, examining, pressing, numbering, separating, binding, perforating the paper currency of our country. The plates and stamp dies are kept in vaults that require three men's time a quarter of an hour to open. The printing of bank notes requires twenty-two to twenty-four days, and during the process it passes through the hands of fifty-two workmen.

NEWTON.

Newton, for many years the home of Horace Mann, the noted educator, lies seven miles west of Boston. It contains the suburban homes of many wealthy business men of Boston. Its schools are noted for their excellence.

The Lassell Female Seminary and the Baptist Theological Institution are located here.

It was here that the famous Eliot first preached to the Indians. The spot is marked by an appropriate monument.

The items of interest just given are illustrative of what may be done with most of the places mentioned in the outlines of the various states.

The pupils' attention should be called to the scale of miles found on each good map in their text book, and also to the fact that few of the maps are drawn on the same scale. By use of the scale they should be required occasionally to find the distance between designated places.

CONNECTICUT.

Conn. 1788.	"Wooden Nutmeg State." "Wooden Nutmegs."		Position.
			Size.
			Atlantic Ocean.
			Long Island Sound.
		Rivers	Connecticut.
			Housatonic.
			Thames.
			Hoosac Mountains.
		Cities.	Hartford.
			New Haven.
			Bridgeport.
			Waterbury.
			Norwich.
			Willimantic.
			New London.

KEYWORDS.

58. "City of Elms."
59. "The Rose of New England."
60. "Land of Steady Habits."
61. "Charter Oak."
62. "The Onion City."
63. "Horse Neck."
64. "Judge's Cave."
65. "Freestone State."
66. "Blue Laws."

QUERIES.

63. What Indian once lived in this state?
64. Where did P. T. Barnum live?
65. Which town manufactures the most brass buttons?
66. What city manufactures the most fish hooks in the United States?
67. What countries of Europe directly east of Connecticut?
68. Where are the largest thread works in this country?
69. Where was Tom Thumb's home?
70. Do you know the stories concerning Israel Putnam? Tell them to your class.
71. What city is called "The Forest city of New England?"

THE OBLONG.

The tract of land in the southwest corner of Connecticut formerly belonged to New York. Connecticut traded other land in Long Island Sound for this strip containing upwards

of 60,000 acres of land. There are four towns situated thereon.

HARTFORD.

This city is situated fifty miles up the Connecticut River. It has a population of 50,000 and is the capital of nutmegdom.

It is noted for its life, fire and accident insurance companies, for its book and printing establishments, for its libraries, and for manufacturing industries.

In the Historical rooms is the stump of Charter Oak; an arm chair has been made from this relic. In Hartford the first witch in America was executed.

Mark Twain's home is here.

Colt's Firearms Company is located in this city, their works cover 125 acres of ground.

Hartford is sometimes known as the "Queen City of New England."

NORWICH.

Norwich, one of the most thriving manufacturing towns of Connecticut, is mainly built upon an eminence between the Yantic and Shetucket rivers where they unite to form the Thames. The site of nine miles square was purchased for a company by Maj. John Mason, of the noted Indian chief Uncas and his two sons in 1659 for £70.

It is at the head of navigation on the Thames and has a commodious harbor.

It has the largest paper mill in New England and the largest cotton mill but one in the United States.

The "Falls" on the Yantic about a mile above the Thames are about fifty feet in height, and afford abundant water-power, which is utilized by many factories of various kinds.

NEW HAVEN.

New Haven is pleasantly situated at the head of a bay opening into Long Island Sound. Every thing here bears the impress of New England, the land of smart sayings and Yankee ingenuity. The center of the city is occupied by great trees and a grass-grown square.

Yale University and accompanying college buildings are important factors to the city.

The Candee rubber works—second in size in the U. S.—the Winchester rifle and ammunition factory, are located here. Oyster farming is extensively carried on, and Fair Haven oysters are regarded second to none on the Atlantic coast.

This city is the home of many prominent scholars and writers of the present day.

CONNECTICUT RIVER.

This river is the outlet of Lake Connecticut in Northern New Hampshire. It forms the boundary line between Vermont and New Hampshire. It is 450 miles in length and drains nearly 11,000 square miles of land. The Connecticut Valley is noted for its fertility and great beauty. The broad meadows, the bluffs and mountain terraces lend beauty to the scene. In an early day this valley witnessed many acts

of Indian cruelty and the historical societies are rich in Indian legends and lore.

LONG ISLAND SOUND.

Long Island Sound is a portion of the ocean separating Long Island from the mainland. It is 110 miles in length and from 2 to 20 miles wide. The east end passage is called The Race. The west end is connected by a strait called East River and The Narrows with the New York Bay. Steamboats plying along the coast pass through this sound.

There are several lighthouses along the coast.

BRIDGEPORT.

Bridgeport, situated on Long Island Sound in the southwestern part of Connecticut, is noted for the manufacture of sewing-machines, firearms and carriages. The Wheeler and Wilson and the Howe sewing machines are made here.

Golden Hill, an eminence about 100 feet high, back of the city, is the fashionable residence district and commands a beautiful view of the Sound.

Bridgeport formerly was one of the most important summer resorts.

RHODE ISLAND.

"Little Rhody." "Gunflints."	{	Size	
		Atlantic Ocean.	
R. I. 1790.	{	Narragansett Bay.	
		Blackstone River.	
	{	Islands.	{ Rhode Island. Block.
		Cities.	{ Providence. Newport. Woonsocket.

KEY WORDS.

47. Roger Williams.
48. Indian Rock.
49. "Eden of America."
50. "Heroine of Newport.
51. Lime Rock Lighthouse.
52. Drum Rock.
53. "Isle of Peace."
54. Old Stone Mill.
55. Perry's Statue.
56. Fort Adams.
57. Spouting Head.

QUERIES.

51. How were the streets of Providence named?
52. What state raises barely wheat enough for her people?
53. How many Rhode Islands could be made of your state?
54. Why has Rhode Island two capitals?

55. What rebellion took place within the limits of this state?

56. Where was the first successful cotton mill established?

57. For what is Narragansett Bay noted?

58. What minerals are found in Rhode Island?

59. What is the state motto?

60. New England has a great many "necks." What are necks?

61. Which colony was the last of the original thirteen to ratify the constitution?

62. Which is the most densely populated state in the Union?

BLOCK ISLAND.

Block Island is a favorite resort for summer tourists.

The dried codfish of this island are held in high repute.

On the east side is a very large hotel and a good break-water, making an excellent harbor.

Adrian Block built the first ship in America at Manhattan Island in 1613, and in the *Unrest* sailed through Long Island Sound and discovered Block Island.

PROVIDENCE.

Providence was founded by Roger Williams, in 1636.

This town surrounds a body of water nearly one mile in circumference, called "The Cove."

The basin is enclosed by a granite wall, on top of which is an iron fence, and just beyond a boulevard eighty feet wide with shade trees on each side.

Brown's College is located here.

Providence is celebrated for its jewelry manufactures. The Gorham silver factories are the largest in the world.

The Providence trade in print calicoes is as great as any city in the United States.

RHODE ISLAND.

Rhode Island is situated in the Narragansett Bay. Newport, which was settled in early times, is the principal city. It is noted for being one of the most fashionable summer resorts. It contains relics of the Norsemen. The island affords excellent facilities for surf bathing and has much scenery that is picturesque and romantic.

WOONSOCKET.

Woonsocket is the business center of the Blackstone valley. It has many manufacturing interests and employs many thousands of workmen.

Woonsocket has all the modern appliances for a city, extensive waterworks, street car service, electric lights and fire alarms, free delivery of letters, a paid fire department, and a cottage system of hospitals. The most extensive woolen mills in the United States, and the largest rubber shoe factory in the world are located here.

EASTERN STATES.

NEW YORK.

"Empire State." "Knickerbockers." N. Y. 1788.	}	Population.	
		Comparative size.	
		Atlantic Ocean.	
		New York Bay.	
		Long Island Sound.	
		Lakes.	{ Ontario. Erie. Champlain. George. Oneida. Cayuga. Seneca. Chautauqua. Otsego.
		Rivers.	{ Hudson. Mohawk. St. Lawrence. Niagara. Genesee. Oswego. Delaware. Susquehanna.
		Canals.	{ Erie. Champlain.
		Islands.	{ Long Island. Staten. Bedloe's. Governor's.

}	Mts.	{	Adirondack.
		{	Catskill.
}	Cities.	{	Highlands.
		{	Mt. Marcy.
		{	New York.
		{	Brooklyn.
		{	Albany.
		{	Troy.
		{	West Point.
		{	Saratoga.
		{	Buffalo.
		{	Rochester.
		{	Syracuse.
		{	Utica.
		{	Elmira.
		{	Oswego.
	Products.	{	Animal.
		{	Vegetable.
		{	Mineral.
		{	Manufactured.

SUGGESTIVE KEY WORDS.

67. Croton Aqueduct.
68. Statue of Liberty.
69. Elevated railroads.
70. The Obelisk.
71. The Battery.
72. Palisades.
73. "The Queen City of the Lakes."
74. "The Military City."
75. "The Flour City."
76. "The Salt City."
77. The Toombs.

78. United States Navy Yard.
79. "The Summer Resort."
80. Castle Garden.
81. Five Points.
82. "The Twin Cities of America."
83. "The Empire City."
84. Wall Street.
85. Vassar College.
86. "The City of Churches."

QUERIES.

72. What is Hell Gate? (Tell about the removal of the obstructions to commerce.)
73. Describe a lock in a canal.
74. What city was used as a Confederate prison?
75. What city is lighted by natural gas?
76. By what names has New York been known?
77. Give the origin of the name New York.
78. Tell the history connected with the "Half Moon." "Clermont."
79. What effect did the Erie Canal have upon this state?
80. What is North River?
81. What city manufactures the most wheat starch in America?
82. Where is the busiest river in the world for its size?
83. What is the area of New York City? Population?
84. How long is Long Island?
85. Where are the Thousand Isles? For what noted?

86. Locate several mineral springs.

87. What is a dry dock? (Simpson's dry dock in Brooklyn is the largest in the world.) Its use?

88. Who first found salt in New York? (The Indians manufactured salt for over fifty years. Now the wells are controlled partly by the state.)

89. How do vessels sail from Lake Erie to Lake Ontario?

90. What lake of New York is tributary to the Gulf of Mexico?

91. Give names denoting Indian origin? English? Dutch?

92. State the cause of the jog in the eastern boundary of New York?

93. Who is the wizard of Menlo Park?

94. How was the news of the completion of the Erie Canal telegraphed?

95. Which city in the United States contains the largest church?

A TRIP ON THE HUDSON AND MOHAWK RIVERS.

Instead of the usual "Items of Interest" we will take a trip down the noble Hudson and its principal tributary, the Mohawk, and note some of the facts about the important places we find.

To begin at the source of the Hudson we shall have to go up to the picturesque Adirondacks, from whose rocky and forest clad sides the melting snows and numerous springs send impetuous brooklets of clear, cold water, that fret, foam and dash down their rocky beds, until reaching some natural

depressions, they rest themselves in placid lakes before continuing their journey down to the mighty ocean. A number of small streams coming from these beautiful mountain lakes unite in Essex county and form the Hudson, which, as you know, was named after Henry Hudson, the great navigator, who discovered it in 1609. From the summit of one of the many peaks of the Adirondacks we may get glimpses of the justly famous Lakes Champlain and George—celebrated both for their wonderful beauty and their historical associations.

The Adirondack region is dotted with beautiful lakes, grand mountain peaks and romantic glens. Mounts Marcy, Whiteface and Dix are the highest, all ranging near 5,000 feet above sea level.

There are three lakes on Mt. Wallface which send their waters into the Atlantic by the Hudson, into the St. Lawrence by the Racket and into Lake Champlain by the Ausable.

In this region, the deer, black bear, panther, wolf, wildcat, lynx, and even the moose, besides great numbers of the smaller animals are yet found in the dense forests.

Many varieties of trout are found in the lakes and streams.

It is a fact worth mentioning that nearly all of the lakes of our country lie north of the southern boundary of New York, and no state excels New York in either the number or beauty of her lakes.

Going southward a short distance and then making an abrupt sweep to the east the river brings us to Glenn's Falls,

where the river makes a descent of fifty feet, thus affording abundant water power. A fine quarry of black marble, and the picturesque scenery in the vicinity, are the only noteworthy features.

As we pass southward we leave Saratoga Springs to our right. At this place you remember, Burgoyne surrendered his army in 1777.

On account of the medicinal properties of the mineral springs, this has become one of the most celebrated of the fashionable summer resorts. Of its magnificent hotels, several have accommodations for 1,000 guests apiece.

We now come to the Hudson's principal tributary, the Mohawk, which has a southeasterly course of about 175 miles.

Descending the Mohawk to the point where it changes its direction from south to southeast, we come to Rome, a thriving manufacturing town, built upon the site of old Fort Stanwix, of Revolutionary fame.

Going further down the river, on the site of old Fort Schuyler, we reach Utica. Utica is built at the junction of the Erie and Chenango canals, and is devoted to manufacturing and has some note as a shipping point for dairy products.

About twenty miles further down, the Mohawk rushes through a narrow, rocky gorge, and descends over forty feet in less than a mile. This romantic place is called Little Falls.

Further down, on a small tributary from the north, is lo-

cated Gloversville, a prosperous town whose name is derived from its leading industry—the manufacture of gloves and mittens. In this city and its neighbor, Johnstown, are made two-thirds of the leather gloves and mittens manufactured in the United States.

Passing on down the Mohawk, the next important town is Schenectady, a place engaged largely in the manufacture of engines, vehicles, machinery, and ironware of various kinds. Union University, one of the oldest in the state, is located here.

The terrible Indian massacres of 1690 and 1748 at Schenectady should be mentioned.

We next arrive at Cohoes, a great cotton-cloth manufacturing city, situated at the junction of the Mohawk and Hudson. The Mohawk here descends about 100 feet, thus giving a great water power, which is utilized by the factories. One-third of the hosiery of this country is made by the factories of Cohoes.

Three miles below, we reach Troy, which manufactures more shirts, cuffs, collars, mathematical instruments and globes than any other place in the United States.

The iron and steel manufacture is also a very important one.

In the beautiful Oakwood cemetery of Troy are buried two major generals of the United States army—Geo. H. Thomas, “The Rock of Chicamauga,” and John E. Wool. The monument to the memory of Gen. Wool is a stone obe-

lisk seventy-five feet in height, and is said to be the largest piece of granite quarried in the last 3,000 years.

Six miles below Troy we come to Albany, the capital and one of the very oldest towns in the state.

A bi-centennial celebration, held on July 22, 1886, commemorated the two-hundredth anniversary of the granting of its charter. Among the old buildings, one of the oldest and most interesting in its historical associations, is the Schuyler mansion, where Washington, Franklin, Gates, Lafayette, Burgoyne (the latter a prisoner) were entertained. In this house Alexander Hamilton was married to a daughter of Gen. Schuyler, and in 1858 Ex-President Fillmore was married to the widow McIntosh, who owned the mansion at that time.

The capitol at Albany is, excepting the capitol at Washington, the finest public building in America. It cost \$20,000,000.

Albany is the eastern terminus of the Erie canal. Its commercial activity began with the arrival of Robert Fulton's famous Clermont, in 1807.

Traveling on toward the ocean we pass Catskill, a noted summer resort, and also a departing point for tourists bound for the picturesque Catskills region, a short distance eastward.

The next town of importance is the manufacturing town of Kingston, which has a romantic situation at the foot of the Catskill mountains.

Continuing our journey, we arrive at Poughkeepsie, "a

safe and pleasant place," noted for its great cantilever bridge and for being the seat of Vassar College, the largest of the colleges for females in this country. It is said that in existing records, Poughkeepsie is spelled in forty-two different ways.

A short distance southward, Fishkill and Newbury, on opposite sides of the river, are situated. Ferry boats, of sufficient size to transfer a whole train of cars at a load, ply between the two towns. Newbury contains a famous stone house, which was occupied by Washington, as his headquarters, during the closing years of the Revolution. It was from this place that he issued the proclamation disbanding the army.

Four miles below Newburg is Cornwall, the most popular resort on the Hudson, and the former home of N. P. Willis and E. P. Roe, both well known American authors.

Descending the river a short distance, we find West Point, famous for its history, its United States Military Academy and for its magnificent views. It is visited by many tourists every summer. A monument to the memory of the patriot, Kosciusko, who superintended the construction of the first defenses of West Point, was erected by the cadets in 1828. A visit here brings to mind the traitor, Arnold, and the unfortunate Andre.

As we emerge from the justly celebrated Highlands we pass the village of Peekskill, and a few miles further we reach the historic Stony Point, which "Mad Anthony" Wayne captured from the British without firing a shot.

From the limestone cliffs in this neighborhood great quantities of lime are obtained, and, a few miles below, at the village of Haverstraw, are immense brick-yards. The banks of clay are of a very valuable quality. In this village, on "Treason Hill," still stands the building in which Arnold and Andre met to negotiate for the betrayal of West Point. Before us lies Haverstraw Bay, an expansion of the river, that, below Croton Point, was dignified by the early settlers with the name of Tappan Zee (sea). This widening of the river extends about 12 miles, and in the widest part measures over three miles.

Croton River, a small stream from which New York city gets her supply of water, enters from the left, near Croton Point. Six miles up the creek, a dam 250 feet long, 70 feet thick at the bottom and 40 feet high, causes an artificial lake, from which an aqueduct over 40 miles long carries the water into the city. The carrying capacity of the aqueduct is over 2,000,000 gallons per hour.

Four miles below, on the left bank, is Sing Sing, "Stony Point," noted for having one of the largest of New York's state prisons. This prison, unlike many others, is not enclosed by high walls, but is guarded by armed sentinels.

A little further down, on the same side of the river, is the hamlet of Sleepy Hollow, in whose vicinity are many spots immortalized in the writings of Washington Irving. Irving's grave is here. The stone bridge mentioned in the ride of Ichabod Crane is still standing, as is also the old Dutch church, built in 1699.

Just below is Tarrytown, where Major Andre was captured, and near which the scene of Irving's story of Rip Van Winkle is laid.

As we pass down the river here, our attention is attracted to the palisades, a wonderful line of precipitous stone walls, from 200 to 300 feet in height, extending for 20 miles along the west shore of the Hudson. These, with the other scenic features of the Hudson, caused it to receive the appellation, "Rhine of America."

A short distance southward we arrive at Yonkers, a healthful, suburban, residence town, adjoining New York city.

We are now approaching the largest city on the western continent and one of the largest in the world. It is built mainly on Manhattan Island, which is over thirteen miles long and over two miles wide in the widest portion. The city itself has a population of over 1,600,000, while, with Brooklyn, Jersey City, and other adjoining towns, which are really simply suburbs of New York, there is, within a circle of 20 miles, taking the City Hall as a center, a population of about 3,500,000. The island of Manhattan is bounded by the Hudson, East and Harlem rivers, and a short distance on the north by Spuyten Duyvel creek.

As we reach the island, we first notice Riverside Park, where our beloved General Grant is buried. His magnificent monument-tomb, which reaches 300 feet above the waters of the river, will long be admired and remembered as the grandest mausoleum ever erected by an enlightened people.

A little further down, and further inland, is that pride of every New Yorker, the Central Park. This park is over $2\frac{1}{2}$ miles long and over one-half a mile wide. It was formerly (less than 40 years ago) a dreary waste of rubbish piles and scrubby thickets, and was dotted here and there with forlorn shanties of the most wretched sort. Since it was laid out, in 1858, over \$15,000,000 has been expended upon its improvement, with a result of one of the largest and finest parks in the world. Among the attractive features are: $5\frac{1}{2}$ miles of rides, $9\frac{1}{2}$ miles of drives, 28 miles of walks, 3 lakes, 8 bridges, 38 tunnels, many picturesque rocky knolls, the Terrace, a "sumptuous pile of light Albert-freestone masonry, with arcades and corridors, and rich carvings of birds and animals;" the famous Bethesda fountain; a ball ground; the *Carrousel*, a place fitted for the amusement of young children; the "Zoo," a menagerie; the Belvedere, a tall Norman stone tower, and many monuments, among which may be named those of Scott, Shakespeare, Burns, Fitz-Green Halleck, and the Beethoven Bust.

Now we are in the midst of so many objects of interest that our modest little volume might be fairly filled with descriptions of the noteworthy buildings, etc., to be found in New York and Brooklyn. We prefer, however, to leave the teacher here to make his own selection of the points of interest to present to his pupils. The field is so rich and so well known that no *teacher* needs our help here.



PENNSYLVANIA.

Penn. 1787.	"Keystone State." "Keystones."	Boundary.	
		Comparative size.	
		Lake Erie.	
		Rivers.	{ Delaware. Susquehanna. Juniata. Alleghany. Monongahela. Ohio.
		Moun'ns.	{ Alleghany. Blue Ridge. Chestnut Ridge.
		Cities.	{ Philadelphia. Harrisburg. Pittsburg. Alleghany. Reading. Erie.
		Products.	{ Animal. Vegetable. Mineral.
		Manufactures.	

SUGGESTIVE KEY WORDS.

87. The Quaker City.
88. The City of Homes.
89. The Smoky City.
90. The Walking Purchase.
91. Old State House.
92. The Liberty Bell.

- 93. The Birmingham of America.
- 94. Wyoming Valley.
- 95. Valley Forge.
- 96. The United States Cemetery.
- 97. Mason and Dixon's Line.
- 98. The Black Diamond State.
- 99. Oil Regions.
- 100. Coke Ovens.
- 101. Capitals of United States (3.)
- 102. The Centennial.
- 103. Serpentine Barrens.
- 104. The Nickel Mines.
- 105. Queen Esther's Rock.
- 106. Penn's Elm.
- 107. Johnstown Flood.

QUERIES.

- 96. Who are the Pennsylvania Dutch?
- 97. What Indian tribes once lived in this state?
- 98. Who was the Quaker King?
- 99. Name the most famous document in Pennsylvania history.
- 100. How were the streets of Philadelphia named ?
- 101. What poet is known as the Quaker Poet ?
- 102. Where is the most picturesque part of Pennsylvania?
- 103. Where and how do railroad engines take water without stopping, i. e., "on the fly?"
- 104. What do the people of northwestern Pennsylvania use for fuel?

-
105. Who was Gertrude of Wyoming?
 106. What have the authors and poets of this state written?
 107. Which city in our country produces the most hosiery?
 108. Which one exports the most coal?
 109. Name the noted battlefields of Pennsylvania?
 110. Which city of the United States manufactures the most glassware?
 111. How is coal oil transported in this country?
 112. Look up the history of the Pennsylvania Whisky War.
 113. Can you repeat Penn's speech to the Indians and their reply?
 114. What names bear evidence of Indian origin? German?
 115. What college forbids ministers to enter its halls?

ITEMS OF INTEREST.

PENN'S ELM.

At Kensington, within Philadelphia or its city limits, is a plain stone monument, which marks the site of Penn's Elm, under which the celebrated treaty was made. This oral treaty with the Indians, which neither he nor they ever violated, is the large white spot in American history of the dealings with the aboriginal owners of the land. It is said that "not a drop of Quaker blood was ever shed by an Indian."

STATE HOUSE.

Independence Hall was begun in 1729 and completed in

1734, at a cost of \$250,000. This is a shrine of American Liberty! Here the noble men, who signed the Declaration of Independence, imperiled their lives, their fortunes, and their honor. Who does not love to read the history of one's own native land? Here many a poor fellow, wounded at Brandywine, breathed his last. Here American prisoners, captured at Germantown, were confined. Here we find the old State House bell. Tell its story.

THE TRIANGLE.

Running due west, on the north boundary line would leave Pennsylvania without a lake harbor, and the early settlers, intelligent men, saw this. Three States claimed the right to dispose of this three-cornered piece of land. After some negotiations, New York, Connecticut and Massachusetts surrendered their rights to the United States government. Pennsylvania paid the government about \$150,000 in "Continental certificates." Pennsylvania also paid the "Six Nations" \$2,000 for their interests.

PETROLEUM.

Petroleum, or mineral oil, is thought to be like coal, of vegetable origin. Wells are bored, by means of steel drills, driven by powerful machinery, often to great depths, before the oil reservoir is tapped. Sometimes the pressure of gas within the oil reservoir forces the petroleum to the surface, causing the wells to overflow. In others, the petroleum is pumped to the surface. To increase the supply, a torpedo

of nitro-glycerine is exploded at the bottom of the well. In many instances reservoirs of highly combustible gas are struck in forcing the wells. When ignited, this gas sends a lurid flame into the air, lighting the country for miles around. These wells often supply towns near them with fuel and light. Pittsburg saves 40,000,000 tons of coal annually by the use of gas.—*Barnes*.

Get a piece of soft (bituminous) and hard (anthracite) coal and show the difference between them. Notice the difference in burning. Tell of the use of each. Locate the regions containing each.

DESCRIBE A COAL MINE.

Take your pupils and visit one, and, experience proves, that it will be one of the pleasant and never to be forgotten lessons.

The deepest coal mine in America is in Pottsville, Pa. The shaft is 1,576 feet deep. From its bottom, almost a third of a mile down, 200 cars, holding four tons each, are lifted every day. They are run upon a platform, and the whole weight of six tons is hoisted, at a speed that makes the head swim, the time occupied in shifting a full car being only a little more than a minute. The hoisting and lowering of men into coal mines is regulated by law in that State, and only ten can stand on a platform at once, under penalty of a heavy fine.

THE BURNING MINE.

The mines at Summit Hill, Pa., caught fire in 1832, and

thousands upon thousands of dollars have been, and are being, expended, to extinguish the fire, but without any success.

They will probably continue to burn until there is no coal left to feed the underground conflagration.

The effects of the fire and the heat produced are visible at all points in this vicinity, and the mines are gradually, day by day, tumbling in, as the coal is burned away. No attention was paid to the fire at first, but it has gradually crept along, under the surface, until hundreds of valuable coal fields are now laid waste.

DISCOVERY OF HARD COAL.

Philip Ginter was, to the hills of the Lehigh Valley, what Rip Van Winkle was to the region along the Hudson. Philip was a tramp of the Mauch Chunk region, who was fonder of his gun and dog than of cleanliness and sobriety. One day, in 1791, he had been out on a hunting expedition, and, as usual, he had fallen asleep under a tree, when a rain awakened him. He rubbed his eyes, swore at his ill-luck, and started homeward.

Amidst the rain and the approaching night, he felt forsaken, and, accidentally stumbling, he displaced a number of *black stones*.

Now Philip had heard of "black stones that would burn," but supposed it to be a legend, or fairy story; however, being of an inquisitive turn of mind, he picked up a few specimens and carried them home.

Shortly afterwards he showed them to a friend, who took them to Philadelphia for an examination, where they were pronounced to be *stone coal*. A company of men determined to buy out Ginter, but Philip reasoned to himself that, if it was worth the sum they offered, it was worth more, and he refused their proposition.

They intimated that others could find the same place, when Philip informed them, in Pennsylvania Dutch, they might hunt until doomsday, and they never would find it.

Then they agreed to his proposal and gave him a tract of land along a stream, upon which he built a mill.

Scarcely was the mill erected when it was ascertained that the title was worthless.

MAUCH CHUNK.

Mauch Chunk (Bear Mountain) lies in a mountain valley, on the Lehigh River, in the center of the hard coal region. Near by is Mount Pisgah, with its famous inclined plane and the Gravity Railroad to the coal mines.

Near Mauch Chunk, in 1791, anthracite coal was discovered by Philip Ginter. The Centennial anniversary of the discovery of coal was celebrated here.

Anthracite was first called "black stone," and experiments in Philadelphia asserted that it put out the fire.

Thirty years expired ere the shipments were of great value. The mines are nine miles back from the river, and in 1827, a track was built for the cars to run down, of their own accord, hence the name Gravity Railroad.

The cars were pulled back by mules, which were sent down on each train.

In 1844, the inclined plane was laid to the top of Mount Pisgah, on which a stationary engine does the work, formerly done by the mules, and then by a zigzag track, called the Switch Back, the cars reach the mines again.

In case of an accident on the inclined plane, the cars are provided with brakes that will stop the cars, at any desired time, on any portion of the track.

Mauch Chunk is one of the most picturesque places in America, and is visited by thousands of tourists every year.

PITTSBURG.

The Iron City is situated at the junction of the Alleghany and Monongahela rivers.

The city is in the heart of the soft coal region, and the smoke from the foundries, factories, steamboats and dwellings settles over the valley, until the sun loses his brightness in the thick, sooty haze.

By means of the Alleghany River, from the north, the product of the oil wells is shipped to Pittsburg. The crude petroleum passes through the refineries and then is exported.

It is the greatest oil market in the world. Of late years the coal and oil industry has been checked by the discovery and use of gas, which is obtained by sinking wells from 600 to 2,000 feet in depth.

The gas is used extensively as fuel for the factories and for lighting and heating purposes. Millions of tons of coke

are handled here annually. Pittsburg ranks first in manufacturing glassware, and in iron and steel industry. No other city compares with Pittsburg in the number and variety of her factories.

At the Fort Pitt Works are cast the big twenty-inch guns. The guns weigh sixty tons and cost \$50,000. A ball for these cannon weighs over 1,000 lbs.

The American Iron Works cover seventeen acres.

They have an iron mine on Lake Superior and a coal mine at their back door. They make nearly everything that can be made out of iron. They employ 2,500 workmen.

The various nail works are well worth a visit.

In some of them 1000 nails are made in a minute.

Nails are made by a single blow of a machine, on cold iron, and the noise, once heard, will never be forgotten.

The name recalls America's foremost champion in the English Parliament. Near here is the scene of Braddock's memorable defeat.

Pittsburg has the largest ax factory in the world. It turns out 3,000 axes per day.

PHILADELPHIA.

The City of Brotherly Love is situated on a broad, fair stream, and deep enough to permit the large ocean vessels to approach its wharves. The bay below is large enough to accommodate all the fleets of the world.

It enjoys all the advantages of a seaport. Its nearness to the iron and coal mines accounts for its extensive iron and

steel industries and other manufacturing interests, which exceed the shipping interests.

It is the center of the greatest carpet manufactures in the United States.

Philadelphia and New York control nearly all the export trade in petroleum.

Terra-cotta ware is one of the noted productions of this city. In this vicinity are the largest and most important ship building yards in the United States.

There are no tenement houses, owing to the building societies, which enable and encourage the people to invest in homes of their own. Philadelphia retains more of the old customs, old houses and old laws, than any other city. The early Quaker settlers have stamped indelibly their traits of character upon these people.

Among the interesting places are Independence Hall, in which the Declaration of Independence was signed; the United States Mint, the first in the country, and where most of our coin is made; the Bank of North America, the oldest in the United States; the United States Arsenal, the grounds of which cover sixty-two acres, where ammunition is manufactured; the naval asylum, where army clothing is made; numerous schools, churches, and cemeteries, where many noted men are buried.

Around Philadelphia cluster many scenes of historic note. The First and Second Continental Congress assembled here. It was the capital of the United States for ten years.

The battles of Germantown and Brandywine were fought

near the city. The first American flag, the stars and stripes, was made here by Mrs. Ross. A bi-centennial celebration of the founding of the city was held in 1882, in which the ship *Welcome* arrived; a mimic Penn again visited the Blue Anchor, and made a treaty with the Indians. The Centennial Celebration of American Independence was observed by one of the world's largest gatherings.

ERIE.

Erie, built upon the site of the old French Fort, de la Presqu'isle, is Pennsylvania's only lake port. It has a safe and commodious harbor—one of the best on the lakes. The harbor—four miles long and one mile wide—is protected by the island of Presque Isle. The city has many manufactures and considerable commerce. Its position makes it the natural shipping point for large quantities of coal, lumber, iron and oil, furnished by northwestern Pennsylvania.

It was here that Perry fitted out the fleet that won the Battle of Lake Erie in the War of 1812.

It contains a State Soldiers' Home and the finest church building (St. Peter's Cathedral) in the state.

NEW JERSEY.

New Jersey, 1787.	{	"Clam State." "Jersey Blues."	Comparative size.
			Atlantic Ocean.
			Bays. { New York. Delaware.
			Rivers. { Delaware. Hudson. Passaic.
			Blue Ridge Mountains.
			Capes. { Sandy Hook. May.
			Cities. { Newark. Jersey City. Patterson. Trenton. Camden. Long Branch.
			Products. { Vegetables. Fruits. Manufactures. Fisheries. Commerce.

SUGGESTIVE KEY WORDS.

108. Cranberry Marshes.
109. Gardens.
110. Silk City of America.
111. Peat Bogs.
112. The Summer City by the Sea.
113. Lead Pencils.
114. Celluloid.
115. Famous dueling ground.

QUERIES.

116. Why was New Jersey so named ?
117. What price was paid the Indians for the site of New-ark?
118. Name the oldest town.
119. What noted battles were fought in this State?
120. Which town produces the most pottery and crockery ?
121. What is marl ? Its use ?
122. Where are locomotives manufactured ?
123. What canals in this State ?
124. What is a map ? Chart ?

PORT JERVIS.

At Port Jervis, he, who has a fancy for it, may, at low water, stand on a rock in the river, with one foot in New York, the other in Pennsylvania, and touch with his hand New Jersey.

CAMDEN.

Camden is just opposite Philadelphia, on the Delaware River. It is noted for its shipyards, where some of the large American ships are built, and dry docks for repairing them. The principal nickel plate works in the United States are in this city.

The steel pen manufactory of Esterbrook & Co., is here.

ATLANTIC CITY.

Atlantic City is one of the most popular resorts on the Atlantic coast. It is 60 miles southeast of Philadelphia.

The long avenues named after the oceans, and the streets from the various States, are all delightful drives.

The physicians urge the advantage of Atlantic City as a winter resort equal with Florida and other warmer climes.

It has been styled "The American Brighton," and its seasons attract both seekers for health and seekers for pleasure.

One hundred hotels, besides many private cottages, can furnish accommodation to 40,000 people.

JERSEY CITY.

The site of this city was used as farming land by the Dutch for 150 years. In 1802, Paulus Hook, as it was then called, contained one house and thirteen persons.

In 1838 it was incorporated under the name of "Jersey City."

This city, though in another State, is really an extension of New York city, and closely connected with it, in more ways than one. The Morris canal, 13 lines of railroads, and 4 lines of ocean steamers terminate here.

Its chief manufactories comprise watches, crucibles, glass, locomotives, lead pencils, machinery, etc. There are breweries, foundries, sugar refineries, and large trade in coal and iron.

It has a large and fine harbor.

PRINCETON.

Princeton is noted for being the seat of the New Jersey college, or what is more often called Princeton College, and the theological seminary of the Presbyterian church.

Nassau Hall was used as a hospital by both American and British troops during the revolutionary war. This college has a very large refracting telescope. Its object glass is twenty-three inches in diameter. The cost was \$26,000. Here General Washington gained a signal victory over the British and then retreated to Morristown. Here the continental Congress assembled when compelled to flee from Philadelphia.

SUMMER RESORTS.

The Atlantic coast of New Jersey is famous for the number of its seaside resorts. The New Jersey coast is celebrated for its many miles of beautiful beaches, which afford magnificent walks and drives.

A great many large hotels are found along the beach at Long Branch, Ocean Grove, Asbury Park, Atlantic City, Cape May, and other places.

The bathing facilities, the races, the boat clubs and athletic sports and camp-meetings are some of the principal attractions.

Many wealthy people of New York and Philadelphia have built summer cottages at these places and during the hot season their families reside here.

SPANIARDS.

After the downfall of Napoleon Bonaparte, his brother, then King of Spain, and his nephew, became desirous of locating in this country, but were unable to own land owing to State Alien Laws.

Application was made to several States for a special act of the legislature in order that they might become possessors of land.

The New Jersey legislature granted their petition, and near Bordentown, Joseph Bonaparte bought land, upon which was built and elegantly furnished the finest house then in this country.

It became the visiting center of the people from surrounding States, callers being kindly received and royally treated.

The Jersey people were tauntingly spoken of as *foreigners* and *Spaniards*, inasmuch as they had a *King*.

NEVERSINK HIGHLANDS.

These highlands have a post of honor among American Hills, the first to greet the eyes of the incoming mariner and the last to fade from the view of those who go from the New York harbor.

On Beacon Hill is a double-towered lighthouse furnished with the best "Fresnel" lights. The light can be seen a distance of thirty-five miles, or as far as the altitude lowers the horizon.

The government paid thirty thousand dollars to the French for this light.

Many of the scenes of Cooper's "Water Witch" were laid in this locality.

Near by was fought the memorable battle of Monmouth, of Revolutionary fame.

NEWARK.

Newark, the chief city of New Jersey, is situated on the Passaic River, nine miles west of New York City.

Its pleasant location, its extensive manufactories, its connection with the Lehigh Valley coal mines by the Morris canal, its many schools and churches, all make it an important city.

The manufacture of celluloid goods is mostly confined to this place.

It is said that over 400 different manufacturers exist in this city, and no other city has contributed more useful inventions to the industrial world.

Newark leads in trunk and valise making.

There are several large sugar refineries here.

East Newark, or Harrison, is on the opposite bank of the Passaic River and is noteworthy on account of the Clark Thread Works located there. The chimney of the Thread works (335 feet), is the highest in the United States. During a thunder storm in March, 1890, it was struck by lightning twice in the same place. As no provision had been made for ascending the chimney, it became quite a problem as to how the chimney could be ascended, inspected and repaired. At last, a roofer named John Philips, "Steeple Jack," of Newark, was engaged to make the ascent, which he did by fastening a great number of ladders, one above the other, to the side of the chimney by means of stout iron staples which he drove through the brickwork. The feat

involved some original personal engineering and attracted considerable attention and many sightseers at the time.

TIMBER MINES.

In southern New Jersey along the Atlantic coast are the famous "sea meadows," which extend inland nearly two miles.

Farther inland, lagoons or salt water lakes are formed, in the vicinity of which are many marshes. Near Dennisville, cedar logs are found within a few feet of the surface of these marshes.

Iron rods are pushed down until the logs are struck, when they are dug out and sawn into lumber and shingles.

This industry furnishes scores of people in this part of New Jersey with profitable employment and has made comfortable fortunes for many citizens.

The fallen and submerged cedar forests of southern New Jersey were discovered first beneath the Dennisville swamps seventy-five years ago, and have been a source of constant interest to geologists and scientists ever since. There are standing at the present day no such enormous specimens of the cedar anywhere on the face of the globe as are found imbedded in the deep muck of the Dennisville swamps. Some of the trees have been uncovered measuring six feet in diameter, and trees four feet through are common. Many of these were, perhaps, 2,000 years of age. They are in a fair state of preservation.

Dennisville is the result of this industry.

DELAWARE.

Delaware, 1787.	{	Size.
		Atlantic Ocean.
		Delaware Bay.
		Delaware River.
		Canal.
		Cape Henlopen.
		Cities. { Wilmington. Dover.
	{	Fruit.
		Grains.
		Oysters.
		Manufactures.

SUGGESTIVE KEY WORDS.

- 116. "Blue Hen's Chickens."
- 117. Three lower counties on the Delaware.
- 118. Port of Entry.
- 119. Peach Crop.
- 120. Berries.
- 121. The Breakwater.
- 122. The Ice-breaker.
- 123. New Sweden.
- 124. Cypress Swamp.

QUERIES.

- 125. Of what is powder made?
- 126. Which is the most level state in the Union?

127. What state still retains the whipping post?

128. What state is next to Rhode Island in size?

129. With what state was Delaware connected for many years?

130. How did the Brandywine Creek receive its name?

131. Where is the largest breakwater in the United States?

132. The Delaware River has an estuary. What is an estuary?

133. Is Delaware entitled to a member in the House of Representatives?

CIRCLE BOUNDARY.

It dates back to a singular deed made by the Duke of York to William Penn, which reads thus: "August 24, 1784, [all that the town of New Castle, and all that tract of land within the compass or circle of twelve miles of the same." By Penn's charter the southern boundary of Pennsylvania was "by a circle drawn at twelve miles northward and westward, into the beginning of the 40° north latitude, and then west by a straight line.

THE HARVEST OF WILLOWS.

A curious harvest, do you say? Yet during the spring months this harvest actually takes place in Delaware near the powder mills.

The acid from the willow is used in the manufacture of gunpowder.

The banks of the brooks and creeks are lined with willows. The farmers are well paid for this kind of a crop—

they receive six to eight dollars per cord for the branches, the latter if the bark is removed.

Young men among the farmers and mill hands, and young women from the factories, gather at some farm house for a night's pastime and sport.

The shrewd farmer has the bark peeled and the youngsters enjoy themselves as well as at a "corn husking."

WILMINGTON.

The metropolis of Delaware, is twenty-eight miles southwest of Philadelphia, on the Brandywine creek. The Brandywine has a fall of 120 feet within four miles of the city, and along its banks are extensive flour mills, the celebrated powder mills, paper mills, rolling mills, watch factories, morocco factories, car wheel works, pulp works, car shops and shipyards. Wilmington was the first city in this country to make iron ships.

It excels in the production of carriages and passenger cars. The old Swede's Church, built in 1698, is still standing in a fair state of preservation. In the war of 1812, the powder works near Wilmington furnished the sole supply for the American army.

BURIED CEDAR TIMBER.

"We're all in the loggin' business," yet as far as the eye could reach not a tree could be seen standing that would even make the ghost of a fair log. "They ain't a growin'," continued the man. "They're under ground. We dig for

them, or spear them, as you might say. Here's the tool," and stepping into a low hut he brought out a crow-bar that, like everything else, seemed attenuated and was stretched out into a long, slender-pointed rod. "We wade along," continued the man, "and probe with this feeler, and when we strike a log we feel around, and if it's a good one we dig her up, and if it aint we let her soak; that's about the way of it."

"The secret of this business," said my friend, the geologist, "is that ages ago all this area was covered with a fine growth of large trees, and the same are found growing in some parts of the swamp yet, but they have died out and fallen down, and sunk into the soft mud, and so been covered up by mold and mud, until many other layers have grown over them; but in some remarkable way the wood is preserved, and these sunken ancient logs are just as good for shingles and other articles as they were when alive; hence for many years there had been a steady hunt for them.

"The trees upon or near the surface are the only ones available, and, fortunately, are the best, but far below there are probably myriads of others turned to stone, and representing the past geological ages of the earth. The logs are worked out by the men who are nicknamed 'Swampoodles,' and who live in the malarious districts all their lives. When a log is found a ditch is made about it, into which the water soon flows. A great saw is then applied, and the roots removed, and, as a rule, the log will rise to the surface, and can be cut up and carried off, though in many localities the

shingles are made right on the spot and dragged over the swamps on roads, in many cases, made of boughs and twigs. This curious business is not confined to New Jersey; but over in Delaware and Maryland there are similar swamps, where the shingle business has been carried on for years. One of the swamps in Delaware extends over twenty-five square miles, and hardly a house in Sussex County but what is shingled from the ancient deposit."—*Cor. Philadelphia Times*.

SET QUESTIONS.

As the class advance they need reviews of various kinds. This device has been tried with good success. Place the "set" questions on the board and then assign each pupil a state to apply them by written work. Fill in the blanks.

1. The nickname of _____ is _____ state.
2. The people of _____ are called _____.
3. The capital of _____ is _____.
4. The cities of _____ are _____.
5. The metropolis of _____ is _____.
6. _____ was admitted in _____.
7. The products are _____.
8. The rivers are _____.
9. The noted men are _____.
10. The curiosities are _____.

Continue this work occasionally as the class progress.

MARYLAND.

Maryland, 1788.	{	"Oyster State." "Craw-thumpers."	Comparative size.
			Atlantic Ocean.
			Chesapeake Bay.
			Rivers. { Potomac.
			{ Susquehanna.
			Mountains { Blue Ridge.
			{ Allegheny.
			Cities. { Baltimore.
			{ Annapolis.
			{ Frederick.
			Products. { Animal.
{ Vegetable.			
{ Mineral.			
District of Columbia.			
Washington.			
Georgetown.			

SUGGESTIVE KEY WORDS.

125. The Monumental City.
126. Oyster Pungies.
127. The Naval School.
128. The Cardinal City.
129. Baltimore Riot.
130. First Telegram.
131. Star Spangled Banner.
132. The City of Magnificent Distances.
133. Johns Hopkins University.
134. Peabody Institute.

QUERIES.

134. Can oysters live in fresh water?
135. What are spats?
136. What were "Conestoga wagons?"
137. Are oysters planted?
138. What city of over 200,000 inhabitants cannot cast a vote for president?
139. Does the state receive a revenue from the oyster business?
140. How much seacoast has Maryland?
141. What was Lord Baltimore's real name?
142. What historic incident occurred at Frederick?
143. Where is Francis S. Key buried?
144. What canal in Maryland?
145. What territories of United States have no county divisions?

ITEMS OF INTEREST.

ANNAPOLIS.

Annapolis, named after Queen Anne, is situated on the Severn River about two miles from Chesapeake Bay. It was formerly a port of entry and the center of considerable trade and commercial activity, now it is a quiet, old town, noted chiefly as the capital of the state, and for the presence of the United States Naval Academy. To this academy, boys from 15 to 18 years of age are admitted, after passing an examination both physical and mental, and receive four years' instruction in all branches of the naval profession, as

well as in other studies. Extensive grounds are connected with the academy, on which was recently built a naval hospital. Two sloops of war are used in the summer as training ships.

At the session of Congress at Annapolis, in 1783, Washington surrendered his commission as commander-in-chief of the army.

CRISFIELD AND WESTOVER.

The little town of Crisfield, on the southern part of the Maryland peninsula, is said to be "a town of oysters built on oyster shells."

Maryland exceeds all other states in the gathering and shipping of the delicious and succulent bivalve. The oysters are gathered by means of dredges resembling large iron purses. The mouth of each purse consists of a pair of iron jaws, and the pocket of iron chain work. The dredges are dragged along by sail boats under full sail and raised every few moments to be emptied. From this little place alone, over 40,000 barrels of shell oysters, and 400,000 gallons of shucked oysters are shipped annually.

Westover, sixteen miles north of Crisfield, is the center of another very important but far different industry—the raising and shipping of strawberries. More than 600,000 baskets of the luscious red berries are shipped annually from this point. The Westover House, a grand old mansion, with an air of departed glory about it, still stands, a mute reminder of the bygone days of the "American nobility."

BALTIMORE.

Baltimore, named after Lord Baltimore, the founder of Maryland, is one of the three most important seaports on the Atlantic Coast of the United States.

Its nearness to the coal, iron and oil regions give it a marked advantage over many of the other seaports. It is estimated that an ocean steamer can save about \$2,000 on its coal bill in a single trip by starting from Baltimore instead of New York or Boston. The harbor is large, deep and safe. Fort McHenry guards the entrance to the port. It was when a prisoner on a British war-ship that with others was besieging Fort McHenry, that Francis S. Key wrote the famous "Star Spangled Banner," in 1814. The principal industries are oyster packing, fruit canning, manufacture of cotton goods, exportation of coal, cotton, lumber, lard, fruit and provisions. The largest iron rolling mills in the United States are located here. Baltimore has many important manufacturing industries. Among the notable institutions of the city are the Maryland Institution for the Blind, Sheppard Asylum for the Insane, Peabody Institution, Hopkins Hospital and the Johns Hopkins University.

The city is supplied with water from Lake Roland, seven miles distant, by a system of water works, that are said to be the grandest in the world.

Druid Hill, the noblest forest park in the United States, occupies 600 acres just north of the city.

DISTRICT OF COLUMBIA.

This territory originally contained 100 sections of land, situated on both sides of the Potomac River.

The southern part, thirty-six square miles, was re-ceded to Virginia. It was named Columbia in honor of the discoverer of America. Washington and Georgetown are the only two cities. The district is under the control of the Federal Congress. There are many fine public buildings, most of which will be mentioned under the subject Washington.

The National Soldiers' Home is two miles north of Washington, and was built in 1851 by the balance on hand of Gen. Scott's levied contributions in the Mexican War.

WASHINGTON.

The capital of our country is situated on the left bank of the Potomac, about 116 miles from its mouth, on the site chosen by our first president.

It is regularly laid out, with the streets running due north and south, or east and west. It also has twenty-one avenues named after different states.

The capitol is situated near the center of the city and faces east. The corner stone was laid by Gen. Washington, September 18, 1783.

The building was burned by the British in 1814. The entire length is 751 feet, and the extreme breadth is 384 feet. It is one of the most beautiful public buildings in the world.

Pennsylvania Avenue is the great business street of the

city, and reaches from Rock Creek on the west, to the East Branch.

Massachusetts Avenue is north of Pennsylvania Avenue, and is the handsomest in the city. Both of these avenues extend in a north-westerly and south-easterly direction. A noticeable fact about all the streets and avenues is their unusual width.

Among the principal buildings of the city, many of which are massive and beautiful structures, may be mentioned the Smithsonian Institution, the National Museum, the White House, State, War and Navy Departments, Naval Hospital, Pension Office, Patent Office, Postoffice Department, Soldiers' Home, etc., etc.

A great many beautiful monuments of famous statesmen and soldiers adorn the numerous public squares and circles.

The Washington monument, completed in 1884, is 555 feet in height and is called "the world's greatest cenotaph." The foundation is eighty feet square and was begun thirty-six feet below the surface, resting upon the solid rock.

The material used in the lower part is blue granite faced with crystal marble; in the upper part, white marble alone is used. A stairway leads to the top, as does also an elevator in the center.

From its top we could see, to the southward across the river and about fifteen miles distant, Mt. Vernon, the former home and present tomb of Washington.

The Corcoran Art Gallery, open to the public free on

Tuesdays, Thursdays and Saturdays, was given to the city by Wm. W. Corcoran, and is one of the best in the United States.

It would take too much space in our little volume to give even a short description of each of the prominent public buildings.

The city has a population of over 240,000.

SOUTHERN STATES.

VIRGINIA.

"Old Dominion." "Beadles."	Location.	
	Atlantic Ocean.	
	Chesapeake Bay.	
	Drummond Lake.	
	Dismal Swamp.	
	Rivers.	Potomac.
		James.
		Shenandoah.
		York.
		Rappahannock.
	Capes.	Tennessee.
		Charles.
	Mount- ains.	Henry.
		Blue Ridge.
		Allegheny.
		Cumberland.
Va., 1788.	Cities.	Peaks of Otter.
		Richmond.
		Petersburg.
		Norfolk.
		Lynchburg.
	Prod'ts.	Animal.
		Vegetable
		Mineral.
		Manufactured.

SUGGESTIVE KEY WORDS.

135. "Mother of Presidents."
136. "The Wilderness."
137. Chickahominy Swamp.
138. "The tomb of the Unknown."
139. Mt. Vernon.
140. United States Navy Yard.
141. "The Garden of Virginia."
142. The Peninsula.
143. "The Antiparos of Virginia."
144. Piedmont District.
145. "The Hamburg Massacre."
146. "Old Point Comfort."
147. Noted Battlefields.
148. "Father of University of Virginia."
149. "River of Swans."
150. The Natural Bridge.
151. Hampton Roads.
152. "Rome of the South."
153. "The Father of Virginia."
154. "Lady Rebecca."
155. The Salt Pond.
156. "Tide Water Section."
157. "Readjusters."
158. "The Lord of the Roanoke."
159. "Uncle Robert "
160. The Dismal Swamp.

161. "Virginia Leaf."

162. "Sage of Monticello."

QUERIES.

146. Who wrote "Dred," or "Tale of the Dismal Swamp"?

147. What Governor once said, "I thank God there are no free schools nor printing, and I hope we shall have none these hundred years."

148. What religion was once established by law?

149. How many states have been formed from what was once Virginia?

150. Name ten noted Virginians.

151. Who wrote a novel called "The Virginians"?

152. Where are two presidents buried within ten yards of each other?

153. What great man made his home at Arlington Heights?

154. How do steamboats show respect to Washington when passing his grave?

155. Was Washington's old home or grave desecrated during the Civil War?

156. Of what state was Illinois once a county?

157. What Virginian was the first governor of Illinois?

158. Who wrote "Sheridan's Ride"? Locate the scene.

159. Name five authors of Virginia, and what each wrote.

160. Where was Libby Prison located? For what noted? Where now?

161. Where is Fort Monroe? What noted prisoners have been confined there?

162. Who were the seven presidents, natives of Virginia?

163. Who was the lad noted for his exploit at the Natural Bridge?

164. What is the motto of Virginia? What does it mean? What were the Virginia Resolutions of '98? Who drafted them? (Jefferson.)

165. At what place are men trained for the Signal Service and Weather Bureau?

166. Which one of Virginia's noted men held the office of Chief Justice and Secretary of State at the same time?

167. What Indians lived in Virginia? What became of them?

168. What eccentric Virginian desired not to be buried within one mile of any church?

ITEMS OF INTEREST.

The forests of Virginia are extensive and very valuable.

Almost all known varieties of trees of this latitude may be found here.

Virginia has ninety-nine counties and the names are constant reminders of Old England.

Virginia contains many springs noted for their medicinal effect. The most noted are Buffalo Lithia, Sweet Chalybeate, Bath Alum, White and Yellow Sulphur, etc.

The Natural Bridge is 215 feet high. How much higher than Niagara Falls?

Marble is quarried on the banks of the Potomac.

Virginia ranks first in raising peanuts, and second in tobacco.

The Oyster beds in the tide region are "mines" of great wealth, and the fisheries are important.

Jump Mountain is so named in remembrance of an Indian maiden who jumped from a cliff when she saw her lover killed in a battle between the Cherokees and Shawnees.

Gold, iron, copper, lead, zinc, coal, salt, granite, marble, freestone, gypsum, glass-sand, and clays are some of the minerals of Virginia.

Lexington is the seat of Washington and Lee University, also Virginia Military Institute. Here General Robert E. Lee breathed his last, and Stonewall Jackson rests in the old church yard.

Blowing Cave is another curious freak of nature. In the winter a current of cold air rushes into the cave and during hot weather the cold current is emitted. Why is this?

There are numerous sandstone quarries throughout the state.

The State Institutions are the penitentiary, three Insane Asylums, the one at Williamsburg, established in 1773, is the oldest in the United States, Deaf, Dumb, and Blind Institutes, Virginia Military Institute, Agricultural and Mechanical College and Normal Schools for blacks and whites. Norfolk is the principal naval station of the United States, and near Norfolk is a Navy Yard also. Hampton Roads is considered the best harbor along the Atlantic coast.

Virginia is one of the most picturesque states of the Union. From the Peaks of Otter the ocean can be seen. The Nat-

ural Towers, Bolivar Heights, Anvil Cliffs, and Purgatory Falls on Roanoke River, are other mountain scenes.

Richmond is noted for many scenes of the past. Aaron Burr was tried here ; LaFayette was received by his officers here ; "Stonewall" Jackson lay in state here with a Confederate flag for his pall ; here, in the " Old Church " (St. John), Patrick Henry uttered his stirring words ; here Lincoln held a reception in Jefferson Davis's Parlors. Some of the noted buildings are the City Hall, Custom House, Governor's Mansion, State Armory, Penitentiary, Medical College, and various factories, mills, and machine shops. The city contains statues of Washington ; Henry, delivering an address ; Jefferson, pen in hand ; Marshall, stern and firm ; General Andrew Lewis, the pioneer.

Virginia contains seventeen National Cemeteries cared for by salaried superintendents who are under Government Inspectors. Any neglect is promptly reported. A headstone marks every grave ; the walks are graveled ; shade trees and flowers beautify the last resting place of the Nation's dead.

Weyer's Cave is next to the Mammoth Caves of Kentucky ; it has been called "The Antiparos of Virginia ;" it was named after Bernard Weyer. The different parts of the cave bear names descriptive of each, viz.: Ghost Chamber, Cathedral, Anthony's Pillar, Jacob's Ladder, The Bottomless Pit, Oyster Shell, The Tower of Babel, and many others.

Near Richmond, in the James River, are the so called Falls, really only rapids, inclosing a number of small islands.

The largest of these islands and the most widely known is Belle Isle, which was one of the prisons for Federals during the Civil War. It is visited by many people every year.

Harper's Ferry, of "John Brown fame," is located where the Potomac breaks through the Blue Ridge, and the mouth of the Shenandoah River. Jefferson said the scene was worth a trip across the ocean to witness. It was named after Harper, of Oxford, England, in 1723.

At Hampton is a Government School for Indians. An effort is made to teach Indian girls to sew, and the boys to farm or learn a trade. The scheme is only a partial success. The writer is personally acquainted with several Sioux Indians who have received instructions in these eastern schools.

The College of William and Mary is near Williamsburg, the old capitol of Virginia. Next to Harvard, this is the oldest college in the United States, and in 1776 it was the wealthiest in America. It was used by the French and Americans in the Revolutionary war, and as a hospital and barracks in the Civil war. Some of the noted graduates are Thomas Jefferson, James Monroe, John Tyler, John Marshall, Peyton and John Randolph, and Winfield Scott.

"The Ladies' Mount Vernon Association" now own Washington's Old Home and 200 acres of land. It was purchased for \$200,000, in 1858, and their design is to keep it as a place of public resort and pilgrimage. The library and bed room remain the same as when they were last used by Washington. The barn is 140 years old. The well with

rope and pulley, the covered walks, the slave kitchens, the slave quarters, and the crane in the chimney are still to be seen by visitors. In 1876 Dom Pedro, of Brazil, officiated in beautifying the new grave by planting trees around it. The old church where Washington worshiped in Alexandria still stands. A family resides in the back part, who keeps it in repair and open for visitors at the moderate charge of five cents.

WEST VIRGINIA.

W. Va. 1863.	"Panhandle State." "Panhandleites."	{	Size.	
			Rivers.	{ Ohio. Kanawha. Big Sandy. Monongahela.
			Allegheny Mountains.	
			Cities.	{ Wheeling. Charleston. Parkersburg. Harper's Ferry.
			Products.	{ Vegetables. Minerals.

SUGGESTIVE KEY WORDS.

- 163. Baden-Baden of America.
- 164. John Brown.
- 165. Saratoga of the South.
- 166. Gas wells.
- 167. Pineries.

QUERIES.

169. Why was West Virginia so named?
170. What is Rock Salt?
171. Of what use is Rock Salt?
172. Name five uses of salt.
173. How deep is the well at Wheeling?
174. What is the State Motto?
175. What battles of the Civil War were fought in this State?
176. Where was John Brown hung?
177. In what does West Virginia excel other States?

CAPON SPRINGS AND BATHS.

These springs are located in Hampshire Co., and have a temperature of 65° Fahr.

These waters are charged with carbonic acid gas, and are used both externally and internally. There are ample hotel accommodations, with plunge, shower, douche, and warm bath establishments.

Capon Springs is pleasantly situated in the mountains, surrounded by picturesque scenery.

These baths will compare very favorably with those of Europe.

PICTURED ROCKS.

These famous rocks are in Grant County, West Virginia, along the road known as the Evansville pike. They have been a source of wonder ever since they were first discov-

ered by white men, over a century and a half ago. They are on the face of a large cliff, situated near the road. The rock is a white sandstone, which wears very slightly from exposure to the weather, and upon its smooth surface are delineated outlines of at least fifty species of animals, birds, reptiles, and fish, embracing in the number panthers, deer, buffaloes, otters, beavers, wildcats, foxes, wolves, raccoons, opossums, bears, elk, crows, eagles, turkeys, eels, various sorts of fish, large and small snakes, etc. In the midst of this silent menagerie of specimens of the animal kingdom, is a full length of a female form, beautiful and perfect in every respect. Interspersed among the drawings of animals, etc., are imitations of the footprints of each sort, the whole space occupied being 150 feet long by fifty wide. It is believed that these figures were engraved many ages ago, but it can not be even conjectured to what race the artist belonged, and how he made these remarkable drawings is quite as much of a mystery.—*Inter-Ocean*.

SALT.

West Virginia has important saline industries.

The Great Kanawha Valley is particularly noted.

The wells vary in depth from 30 to 1500 feet.

Salt is obtained mostly by evaporation ; first by the heat of the sun ; second by artificial heat ; third by condensation by cold then boiling ; and fourth by mining.

An entertaining diversion to the regular lesson would be to read a full account of some noted salt works. Nearly

every year some of the illustrated papers contain articles on this and other fruitful subjects for school work.

WHEELING.

The metropolis of West Virginia, is on the east side of the Ohio river, in the Panhandle. It has an extensive river trade.

Its nearness to the coal mines and iron deposits, makes it an important iron manufacturing city. There are over half-a dozen large glass factories and as many nail mills.

Foundries, machine shops, rolling mills, etc., are on all sides. There is an island in the river, about one mile in length, connected by bridges to the main city. One of the deepest wells in the United States is located here.

Wheeling makes more cigars than all other cities of West Virginia. The National Road crosses the Ohio river at this place. It was the scene of McCullough's leap from the Indians.

PARKERSBURG.

This town is in the midst of hills, valleys and river bluffs, as broken as can be found anywhere. There are large oil refineries here and other numerous industries, in iron and timber.

Flour mills, tobacco factories, etc., make this a busy and thriving town.

HARPER'S FERRY.

Here the Potomac breaks through the Blue Ridge and makes a most magnificent scene. The Baltimore and Ohio Railroad crosses the Potomac at this place.

Before the Civil War it was the seat of a U. S. armory and arsenal. John Brown gave the place some notoriety. Gen. Jackson captured the town and 11,000 Union men in 1862. The town has never recovered from the effects of the war.

On the opposite side of the river stand Maryland Heights, and over the Shenandoah are Loudon Heights, while back of the town are Bolivar Heights. The place was named from one Harper, of England, who established a ferry here at an early day.

PICTURESQUE PLACES.

Ice Mountain, where there is a famous natural ice house. Chimney Rocks, which look like the ruins of some ancient castle. Karr's Pinnacles, which bear resemblances to the obelisks of the old world.

They are in the neighborhood of 200 feet high, with a width from 10 to 5 feet.

Cathedral rock, which receives its name from the fancied resemblance to a Gothic church.

NORTH CAROLINA.

"Turpentine State." "Tar Heels." N. C. 1789.	Comparative size.	
	Atlantic Ocean.	
	Sounds.	{ Albemarle. Pamlico.
	Rivers.	{ Roanoke. Neuse. Cape Fear.
	Dismal Swamp.	
	Mountains.	{ Allegheny. Blue Ridge.
	Peaks.	{ Black Dome. Mitchell's.
	Capes.	{ Hatteras. Fear. Lookout.
	Cities.	{ Raleigh. Wilmington. New Berne. Fayetteville.
	Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

- 168. Pine Barrels.
- 169. Old North State.
- 170. Little Dismal Swamp.
- 171. Lost Colony of the Roanoke.

- 172. Tar State.
- 173. Tuck-a-hoes.
- 174. City of Oaks.
- 175. Mechlenburg Declaration.
- 176. Lord of the Roanoke.
- 177. Land of the Sky.

QUERIES.

- 178. What noted swamps in this State?
- 179. Where were the military prisons of the Civil War located?
- 180. Who were the Regulators?
- 181. What is the highest peak of the Appalachian system?
- 182. Where was the branch of the United States mint located?
- 183. What Indians lived in North Carolina?
- 184. Name uses of talc, or steatite.
- 185. What is coal tar?
- 186. Of what use is rosin?
- 187. Where is the largest turpentine distillery in the United States?
- 188. From what point can seven States be seen?

WILMINGTON.

This is the metropolis and principal seaport of North Carolina. Wilmington is noted for its "naval stores."

It is the chief market in the world for tar, pitch and turpentine, and it exports, also, rice, cotton and peanuts.

The Carolina Oil and Creosote Co. have a plant where lumber is treated by a patent process.

This method consists in extracting the sap and wood acids, and by a pressure of 125 pounds to the square inch, forcing hot creosoting oil into the open pores of the wood.

This preserves the timber from water, insects, and dry rot.

A United States marine hospital is located at Wilmington.

There are dry docks large enough to accommodate vessels of 1,000 tons. Rice mills, turpentine distilleries are located here.

DURHAM.

Durham owes its fame to a single industry.

The largest granulated smoking-tobacco factory in the world is here.

Cigarettes are a specialty. \$38,000,000 have been paid the government for revenue stamps during the last seven years. Cotton mills make the tobacco sacks, and factories the tobacco boxes. This town has the largest pay roll of any in the State.

TAR.

The old box trees from which turpentine was obtained, the dead trees, and stumps, are used in making tar. The pores become filled with pitchy matter, the wood increases in weight, and will take fire almost as readily as gunpowder.

In making a tar-kiln, the ground is first scooped out, forming an inverted, cone-shaped foundation, with an opening and a tube from the center to some distance beyond the pit. The wood is then piled on end in the pit, pointing to the centre.

Logs and green twigs are then piled around and the kiln is covered with dirt on top and sides. The fire is then lighted at the top and the tar trickles down to the center hole and out through the spout.

A kiln yields from 50 to 100 barrels of tar, according to size.

Pitch is tar boiled down until the volatile matter is driven off.

TURPENTINE MANUFACTURE.

Crude turpentine is the natural juice of the coniferous trees. American turpentine is obtained from two varieties of pine trees, which are most abundant in the Carolinas and Georgia. The distillers lease and sometimes buy vast tracts of pine lands, at about one dollar per acre. A half-moon shaped box is cut into each tree, then each box is *cornered* by taking out a triangular piece. Next, the trees are *hacked*, by making groove-shaped cuts downward to the box.

The sap, a sticky, honey-like gum, is gathered from the boxes and taken to the still.

The *hacking* is performed, perhaps, six times during the season, which lasts from early spring until late fall. The

dipping is done with a spoon-shaped instrument and a peculiar twist of the wrist, only acquired by practice. Two *dippers* follow one hacker. The *dippers* gather the gum in buckets which are emptied into barrels, located conveniently.

The first year's production is called *virgin dip*, the second, *yellow dip*, and following years, *the scrape*. Distilling is carried on in copper stills, varying in size from ten to sixty barrels. Spirits of turpentine is separated by distillation and the residuum, or resin, is let out of the vats, through strainers, into barrels.

A turpentine distillery, employing 100 men, will produce daily 75 barrels of resin or rosin, and between 400 and 500 gallons of turpentine.

SOUTH ATLANTIC SLOPE.

The coast of the South Atlantic States is flat, low and sandy. The shore is protected by long, narrow sand bars.

The productions of this region are rice and cotton, especially the sea island cotton, the most famous known.

The second terrace is a sandy belt, mostly covered with pine trees, from which are produced the tar, pitch, turpentine and rosin of commerce.

The next terrace is the Piedmont, or the uplands, from which the grains, sweet potatoes and tobacco, are raised.

Then in the mountains we find the mineral resources.

WATER POWER.

The Roanoke River falls 84 feet in nine miles above Weldon, North Carolina. 50,000 horse-power might be devel-

oped here for manufacturing interests. Small boats can reach the sea from Weldon.

A noticeable fact of all the rivers; from the Potomac down, is that water power can be obtained easily.

Nearly every stream has a town at or near the mouth, and another at the head of the navigable water.

Advantageous locations for manufacturing industries are found at numerous points on the South Atlantic Slope.

CORUNDUM.

A few years ago a mine of corundum, of such purity and quantity, was found as to be of great importance. This mineral is of such hardness as to cut readily all metals, granite, marble, etc.

Corundum is very sparsely found, heretofore mostly in India and China.

The value of the discovery will be from the use of corundum as an abrasive, without which the economical use of chilled iron and steel would be almost impossible.

Emery has been used extensively for this purpose.

In the form of a wheel, corundum will cut chilled iron, hardened steel, Scotch granite, etc. In the scale of hardness, the diamond stands at 10; corundum, 9; emery, 8. The mineral is deposited over 600 acres, in Macon County, North Carolina.

MOUNT MITCHELL.

The highest peak east of the Mississippi River, is Mount Mitchell, in North Carolina.

It was named in honor of Dr. Elisha Mitchell, who lost his life, by falling down a precipice, on this mountain. His remains are buried on the summit, and hundreds of tourists visit this mountain every year.

CAPE HATTERAS.

This cape is the most eastern extremity of North Carolina, and is one of the most dangerous localities along the Atlantic coast. Near here are the Diamond Shoals, the dread of the sailors. The Gulf Stream flows within 20 miles of the cape, and the mingling of its warm air currents with colder land currents, causes frequent and violent storms.

The coast, below Cape Hatteras, is strewn with the wrecks and fragments of vessels.

MINERALS.

The following are found in North Carolina : Gold, silver, iron, coal, copper, zinc, lead, mica, graphite, buhr-stone, whet-stone, soap-stone, lime stone, granite, etc.

SOAP-STONE SLATE-PENCILS.

The chief ingredient is soap-stone, more scientifically known as talc or steatite. It is a greasy, whitish stone, looking and feeling a great deal like country soap, from which it takes its name. The stone first comes in large chunks, and is subjected to a crushing process in a common quartz crushing machine. It is then ground to a fine powder in a regular buhr-mill, just as flour is made

of wheat, and the powder is next bolted exactly as wheat is bolted. Thus no foreign or hard substance remains to get into the pencil and scratch the slate. This fine powder, which looks much like flour, is then mixed with several chemicals and a neutralizing substance, and the whole put into a tank and boiled, being stirred constantly by a revolving wheel. It is then run into another tank and cooled, turning into a thick pasty substance. This is caked, and by means of machinery made expressly for the purpose, is molded into long slim rods by being forced through a round aperture the size of a slate-pencil. These rods roll down an inclined plane on an easy grade, so as not to break, after which they are picked up and cut into proper lengths. They are then laid between corrugated sheets of zinc, in layers eight or ten deep, the whole called a kit, and put into a steam-heating dry-house at a temperature of 200 degrees Fahrenheit, where they are thoroughly dried. The next process is to place them in a furnace and bake them, after which, if they be intended for plain pencils, they are boxed ready for shipment. Some, however, are sent up-stairs, where there are men and machinery to point one end of each; while others still are sent to another department to be covered with a red and white or white and gold-ringed paper. These pencils most readily take the youngster's eye, and make his mathematical duties less irksome than they would be if aided by one of the rough, uncovered, and unpointed kind. And this is the by no means easy process by which slate-pencils are made. Our reporter was shown 10,000,000

pencils already boxed, waiting for shipment. The factory has a capacity to manufacture 150,000 a day, but has been making but about 75,000 per day.—*Cincinnati Enquirer*.

There are extensive soapstone mines in Vermont, New Hampshire, Massachusetts, Maryland, Virginia, and North Carolina. The above description belongs to the North Carolina factory.

SOUTH CAROLINA.

"Palmetto State." "Weasles." S. C. 1788.	{	Location.	
		Atlantic Ocean.	
		Rivers.	{ Savannah. Santee. Wateree. Congaree. Pedee.
		Mountains.	Blue Ridge.
		Cities.	{ Charleston. Columbia.
		Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

- 178. American Venice.
- 179. Smoking Hills.
- 180. Earthquake.
- 181. Sea Island Cotton.
- 182. Cæsar's Head.

- 183. Battle Fields.
- 184. Revolutionary Heroes.
- 185. "Sand-hillers."
- 186. Rice-birds.

QUERIES.

- 189. How much cotton can a person pick in a day?
- 190. What inventions did Eli Whitney make?
- 191. How much does a bale of cotton weigh?
- 192. Of what use is cotton seed?
- 193. What is the highest point in the State?
- 194. What are phosphates? Their use?
- 195. Where is the noted resort for consumptives?
- 196. What historical incident connected with Cowpens?
- 197. Who was John Locke? What was his "Grand Model?"
- 198. What stands to-day on the ruins of Fort Sumpter?
- 199. What is PADDY?
- 200. Where was the first paper money in America issued?

ITEMS OF INTEREST.

CHARLESTON.

Charleston, the largest city of South Carolina, and a very interesting place, on account of its historical associations, is situated on a peninsula, between the mouths of the Ashley and Cooper Rivers. It has a large, deep and safe harbor, about seven miles in length. The entrance to the harbor is protected by Fort Moultrie, Castle Pickney, and other

lesser fortifications. A lighthouse stands on the island covered with the ruins of the once famous Fort Sumpter.

This city, settled in 1679, is one of the oldest in the Southern States. Goose Church, or Church of St. James, in the midst of a pine forest, near Charleston, was erected in 1711, and is still in a well preserved condition.

St. Michael's Church, in the city, built in 1752, is visited by many tourists, to enjoy, from the belfry, the magnificent view of the city and harbor.

Charleston is devoted mainly to commerce, but of late years considerable increase in manufacturing industries has grown.

The principal exports are : Cotton, rice, lumber, naval stores and fertilizers.

It would be well, in this connection, to recall the interesting history of Charleston. Tell of the attack on Fort Moultrie in 1776 ; the surrender of the city in 1779 ; the execution of the noble patriot, Isaac Hayne, in 1781 ; the firing on Fort Sumpter in 1861 ; the great earthquake in 1886, and of other interesting events in history with which you may be familiar.

In all your work, keep interweaving history with your geography, for you know that we can remember two facts about a place more easily than one.

COTTON GIN.

Eli Whitney, a Yankee school teacher, who was living at Mrs. Green's house in Georgia, invented this machine.

A pound of cotton, cleaned by hand, required a day's work. A cotton pod is less in size than a common hen's egg, and bursts when ripe. The pod contains a number of seeds which adhere closely to the cotton. The cotton gin separates the cotton from the seed, and will separate more in one day than a person can in two months by hand. Take a small box and stretch parallel wires over the top, then place a few wheels of a clock, or wheels with saw-like edges, beneath, and then cause them to revolve, and you have a miniature cotton gin. These wheels catch the cotton while playing beneath the wires, but leave the seed above the wire.

This simple invention made Eli Whitney's name famous, made cotton raising profitable, made slavery dear to the hearts of the cotton-producing States, made the South rich, and crowned cotton King of the southern products.

Tell of the inventor's troubles, the disadvantages under which he worked, how his machine was stolen before he obtained a patent, of his law suits, the burning of his factory, and discouragements from Congress and several state legislatures, in fact his failure to reap the financial reward of his invention.

HOW CAROLINA BECAME A RICE STATE.

"The destiny of South Carolina was changed by a single lucky experiment. In 1696, when the colony was little more than thirty years old, the pioneers were still engaged in buying furs from the Indians, extracting rosin, tar, and

turpentine from the pines, cutting timber for shipment, and growing slender harvests of grain on the light soil along the coast. Attempts had already been made to grow indigo, ginger and cotton, but these had not answered the expectation. A small and unprofitable kind of rice had also been tried in 1688. But one Thomas Smith thought that a patch of wet land at the back of his garden in Charleston resembled the soil he had seen bearing rice in Madagascar. It chanced in 1696, that a brigantine from that island anchored in distress near Sullivan's Island, and the captain, an old friend of this enterprising Thomas Smith, was able to furnish him a bag of Madagascar rice suitable for seed. It grew luxuriantly in the wet corner of the garden, and the seed from this little harvest was widely distributed. In three or four years the art of husking the rice was learned. African slaves were easily procured in the West Indies, and the face of society in the young State was presently changed. South Carolina became a land of great planters, and of a multitude of great toiling negroes. Smith was raised to the rank of landgrave, and made governor of the colony three years after the success of his rice patch. The new grain was at first grown on up-land; but the planters afterward discovered that the neglected swamps were more congenial and less exhaustible. The cruelly hard labor of separating the grains from the adhering husks crippled the strength and even checked the increase of the negroes; but in the years just preceding the Revolution this task came to be performed with mills driven by the force of the incoming and outgoing

tides, or turned by horses or oxen. A hundred and forty thousand barrels of Carolina rice, of four or five hundred weight apiece, were annually exported before the war of Independence. Through the example of a governor of Georgia, the culture of rice spread into that colony, and completed the ruin of the silk business."—*Eggleston*.

RICE.

Rice is one of the cereals of the grass family, and much resembles wheat. It has been cultivated from the earliest times and forms one of the staple articles of commerce. It furnishes food for more people than any other one grain. It is cultivated in many parts of the world, but in the United States, South Carolina, Georgia and Louisiana are especially noted for its production. It is a grain that needs much water, hence rice is principally raised along banks of a river, or low lands adjoining the sea, where the fields can be flooded successfully with water.

Rice is sown in early spring, about three bushels to the acre, in trenches about one foot apart, then water is let on the fields for perhaps one week, or until the grain sprouts. In a week or so, it is hoed, afterwards more water, another good hoeing, then water remains on the ground until the grain is ripe.

Men and boys wade over the rice fields and pull out weeds and grass before the time to harvest. It is cut with a sickle, bound, stacked, threshed, much like oats or wheat. It is not ready for use yet, not till it is hulled, sometimes by hand

in mortars, but mostly by machinery run by steam-power. A machine sorts the rice by means of screens.

The best is called "prime rice," which is then "polished" or "brushed," when it is ready for market.

The smaller and broken grains are called "middlings," which are kept for home use.

There is one variety of rice which is grown on dry land.

VENUS'S FLY-TRAP.

There is a wonderful little plant, commonly called Venus's Fly-trap. It is an inhabitant of damp places in the eastern parts of North and South Carolina. The leaves are arranged in pairs, hinged together below, and raise upward, with their faces toward one another. Around the margin of the lobes are a large number of bristles. The surface of the leaves is very sensitive, and whatever insect alights on it is caught as effectually as a mouse in a trap, and is even squeezed to death by the pressure. The surface of the leaves is covered with a sweet substance secreted by the plant itself, and this constitutes the bait with which the insect is tempted on to its destruction. In order to make death doubly sure to the victim, the plant is provided with three or four sharp spines, in the interior of the trap, with which it pierces the insect. That the plant's sensitiveness is only located on the inner surface of the leaves, may be seen from the fact that it will not close its trap by touching it anywhere else. When the insect has been caught, the trap remains closed until the substance of

the victim has all been absorbed by the plant, when it opens, ready for another victim.

A botanist, who was experimenting with the "fly-trap," found that pieces of beef were soon dissolved and absorbed, but cheese disagreed with it, and finally killed it.

RED BONES.

A singular race of people live in South Carolina.

They are known as the South Carolina Red bones.

Their origin is unknown ; their complexion is red, hence the name.

They resemble gypsies, and live at the foot of the mountains, in a small settlement, holding no intercourse with the neighboring people.

GEORGIA.

“Empire State of the South.”
 “Buzzards.”

Ga.
 1788.

Location and size.

Atlantic Ocean.

Rivers.

{ Savannah.
 Altamaha.
 Oconee.
 Ocmulgee.
 St. Mary's.
 Flint.
 Chattahoochee.

Mountains. Blue Ridge.

Cities.

{ Savannah.
 Augusta.
 Atlanta.
 Macon.
 Columbus.
 Milledgeville.

Products.

{ Animal.
 Vegetable.
 Mineral.
 Manufactured.

SUGGESTIVE KEY WORDS.

187. Georgia Crackers.
188. Andersonville.
189. Sand Hills.
190. The Forest City of the South.
191. Noted Battle-fields.
192. Okefinokee Swamp.
193. The Chicago of the South.
194. International Cotton Exposition.

QUERIES.

201. Which city exports the most turpentine in United States?

202. What has been built on the summit of Stone Mountain?

203. Where was Jefferson Davis captured?

204. Who composed "Marching Through Georgia."

205. Who received the grant of Georgia from the English King?

206. Why was Georgia so named?

207. Where is there a country called Georgia?

208. Which is the largest State east of the Mississippi River.

209. Do any of the Southern States pension the Confederate soldiers?

210. Who once gave the City of Savannah as a Christmas present?

211. What became of the Cotton Exposition Buildings?

212. Which State leads, in the South, in manufacturing?

213. In what does Georgia excel all other States?

214. For what vegetable is Georgia famous?

SAVANNAH.

In 1773 General James Oglethorpe selected the site for Savannah, which is eighteen miles from the mouth of the river. The city is regularly laid out, and *plazas*, or parks, alternate with the business blocks.

These plazas were left vacant for those who lived in distant settlements, in case the Indians might compel them to seek a place of safety. There are twenty-four of them. They are sometimes called "the lungs of the city." They add to the beauty and healthfulness of the city.

Many monuments, statuary and fountains are found in these parks. There are grass-grown yards, with beautiful snell walks, flowers which bloom nearly the year round, Japonicas which bloom in mid-winter, the stately palmettoes, the sweet magnolias, oleanders, orange, and banana trees.

Two strong forts, Jackson and Pulaski, guard the entrance to the river and city.

Savannah is next to the largest cotton market in the United States, and second to Wilmington in naval stores.

The chief buildings in this city are the Custom House, Court House, the State Arsenal, City Exchange, hospitals, asylums, etc. In Monument Square are obelisks, erected to the memory of Count Pulaski, who fought for American independence, and General Greene, of Revolutionary fame.

Savannah is within the influence of the Gulf Stream, hence enjoys the mildness of the tropics in winter, and is a famous resort of northern invalids. Look up in the histories, the scenes enacted here during the Revolution and Civil war.

ATLANTA.

Atlanta was destroyed by General Sherman in 1864.

A fine city, the capital of Georgia, has risen from the old ruins. Unlike other cities of the South, Atlanta owes her

rapid growth to a favorable location and the spirit of enterprise among her citizens. Trunk lines of railroad run to all sections of the State. The surrounding country produces much grain and cotton, besides valuable minerals. The city is built on an elevated plain and a singular feature is the city's supply of water. An abundant supply of drinking water is obtained from an artesian well which is 1,600 feet in depth. The lumber interests, the vast cotton mills, the immense rolling mills, and other industries, give employment to many people. Population, in 1890, 66,000.

AUGUSTA.

Augusta is situated on the Savannah River, at the head waters of navigation, 132 miles from Savannah city.

By means of a canal, a 40-foot fall is obtained, thus furnishing power for factories.

There are extensive flour mills, cotton mills, cotton seed oil mills, iron foundries, Georgia Railroad Machine shops, etc., located here.

A granite monument, 45 feet high, erected to the memory of Georgia's three signers of the Declaration of Independence, stands in front of the City Hall. The Georgia Medical College is located here.

Augusta is the third city of importance in the State.

JEKYL ISLAND.

This island is situated in the Atlantic ocean, eight miles from Brunswick, Georgia, and it is owned by a private corporation of wealthy men.

The island was bought in 1886, for \$125,000 ; then the company built an elegant hotel.

The number of members was limited to 100, with an annual due of \$100. The island is ten miles in length by two and one-half wide.

It has many attractions, viz: The fishing is good ; wild game is plentiful, even deer are found here ; a valuable oyster bed is on an inland shore ; the yachting opportunities are fine ; pure water is obtained from an artesian well ; it is north of the fever line, and receives both the land and the sea breezes ; in fact the comforts and pleasures of this place has not an equal, north or south.

THE BRILLIANT FUTURE OF THE SOUTH.

In a late address, before the Boston Mechanics' Society, Mr. Wendell Phillips, the noted orator, is reported to have said : "The handwriting is so plain on the wall that none but a fool need mistake it. New England is doomed just as sure as natural laws will produce fixed results. New England has no soil worth mentioning, and her wealth has all been derived from her manufactures. These are gradually leaving her, and eventually they will all go ; some to the West, but most to the South, where the advantages for profitable manufacturing are located. The coal and iron in the South are easily obtained, and inexhaustible in amount, and the iron mills, foundries and machine shops, can go to them better than they can be carried to the shops. Then the

cotton and woolen mills must go there, for the raw materials are to be produced there most cheaply, uniformly and better. Then look at the advantages of the extra hours of daylight in a year's run. This, of itself, is no small matter. As the South grows stronger and stronger, the wealth, culture and power of the country will be centered there, until she will become, not alone the mistress of America, but the central empire of the world."

INDIAN RELICS IN GEORGIA.

An Indian cemetery has been found in the center of the Nacoochee valley. There have been taken out human bones, mixed with arrow heads, beads, battleaxes, pipes, and other indestructible articles of sport, domestic use, and war. But the most interesting relics taken from these graves were conch shells, evidently brought from the seashore, and a tomahawk beaten from pure copper in its natural state, though the nearest point on the continent where such copper is found is Lake Superior. It is held that the tribe must have traded with tribes both to the north and to the south. There is also a mound which is unopened, and which is known to have been built by a people ante-dating the Indians.

THE FIRST AMERICAN SILK DRESS.

The first silk dress made in America was one presented by Governor Oglethorpe, the founder of Georgia, to the queen of George III. Oglethorpe expected his colony to

become rich on silk raising and vine-culture, and the first silk raised in Georgia was spun and woven for the royal spouse.

ROME.

This thriving town is the railroad center of the industrial south. It is in the vicinity of the coal fields, the iron mines and marble quarries. The United States Government has undertaken to remove the shoals in the river, when there will be a direct water route to the Gulf. Its water power and water works are among the finest in the south. Its mills, foundries and factories are numerous, and the cotton trade is not light.

JUGGING FISH.

The Georgian boys have a queer way of fishing.

They take a number of jugs and attach fishing lines to the handles of the jugs, then set them afloat. When a jug begins to bob, they know there's a fish on the hook.

The sport is to catch the jug and is called "jugging fish."

SPRINGS.

The Warm Springs.

Powder Springs.

The Chalybeate Springs.

Thundering Springs.

The Indian Springs.

Red Sulphur Springs.

Madison Springs.

Catoosa Springs.

These springs are pleasantly and picturesquely situated in salubrious districts, and most of them have good accommodations for visitors.

NICKOJACK CAVE.

This cave is in the northwestern corner of Georgia.

It extends into the Raccoon mountains, just how far, no one knows. It has been explored about three miles where further progress is stopped by a cataract.

The bottom of the cave is covered with water, hence is accessible only in canoes. The roof is of solid rock. The opening into the mountains is 160 feet wide and 60 feet high.

COTTON-SEED OIL.

This industry has grown rapidly within the last few years. Formerly the seed was thought to be of no value, except the quantity retained for next years seeding. The first use made of it was to return it as a fertilizer.

In 1826, an attempt was made to extract oil from the seed. The experiment was partially successful, for oil was obtained which gave a fair light. In 1834, Natchez, Mississippi, tried to crush the seed for commercial purposes, but the enterprise failed. In 1847, New Orleans, St. Louis, and Providence, R. I., made unsuccessful experiments. In 1878 Atlanta, Georgia, accomplished favorable results by obtaining a fertilizer which doubled the increase of the soil.

Experiments have proved that its uses are many, and its commercial value is very important. Large quantities of oil were exported to Italy where it was used to adulterate olive-oil. Marseilles, France, used it extensively in soap manufacture, instead of ground-nut oil. The oil and cake

is shipped to the Netherlands where it feeds the cattle and enters into the manufacture of butterine.

The ash of the hull is of value for the potash it contains.

Cotton-seed oil is used for lighting purposes, for dressing leather and wool, for lubricating purposes, and as a substitute for linseed oil.

It is used in the manufacture of oleomargarine and glycerine. At present there are perhaps a hundred oil mills in operation throughout the south, most of them under the control of the American Cotton Oil Company.

FLORIDA.

"Peninsular State." "Fly up the Creeks." Fla. 1845.	Location.	
	Atlantic Ocean.	
	Bays.	{ Mexico. Pensacola. Appalachee. Tampa.
	Lake Okeechobee.	
	Rivers.	{ St. Mary's. St. John's. Suwanee. Appalachicola.
	Everglades.	
	Florida Strait.	
	Florida Keys.	
	Capes.	{ Sable. Canaveral.
	Cities.	{ Jacksonville. St. Augustine. Tallahassee. Pensacola. Key West.
	Products.	{ Animal. Vegetable. Marine.

SUGGESTIVE KEY WORDS.

195. Wreckers.
 196. Fountain of Youth.
 197. Pineapples.

- 198. Dry Tortugas.
- 199. Osceola.
- 200. Devil's Mill Hopper.
- 201. Crocodile Pond.
- 202. Orange Culture.
- 203. Wakulla Volcano.
- 204. Prince Murat.
- 205. Life Saving Service.

QUERIES.

- 215. What is the most southern town in United States?
- 216. What are keys?
- 217. What Indians lived here?
- 218. Is a sponge an animal or a vegetable growth?
- 219. Why was Florida so named?
- 220. What Florida lake disappeared at the time of the Charleston earthquake in 1886?
- 221. Who wrote "Away Down on de Suwanee Ribber?"
- 222. What is the seaport for Tallahassee?
- 223. What are limes?
- 224. In what State is Jefferson Davis' birthday a legal holiday?
- 225. Which is the least populous of the Southern States? Most populous?

ITEMS OF INTEREST.

A COUNTY COMPOSED OF KEYS.

Monroe county, Florida, is the most southern county in the United States, and includes a long line of keys or

islands, along which steamers sail for a whole day on their way to New York. These keys are almost wholly of coralline formation, and sweep in a great curve around the end of the peninsula. There are very few towns in the county, the only one of much importance being Key West. The straits between the islands are narrow and tortuous, and large vessels have trouble in making the passage.

WOOD THAT SINKS IN WATER.

There are four hundred and thirteen species of trees to be found within the limits of the United States, sixteen of which, when perfectly seasoned, will sink in water. The heaviest of these is the black ironwood, found only in southern Florida, which is more than thirty per cent. heavier than water. Of the other fifteen, the best known is the *lignum vitæ*, and the mangrove. All the species heavier than water belong to tropical Florida, or in the arid West or Southwest.

The cocoanut trees of Florida are due to nuts washed ashore, from a wrecked vessel, sixteen years ago. Now the State furnishes nearly all the cocoanuts used in the United States.

TAMPA.

Tampa, the most important commercial city on the west coast of the peninsula, is built near the site of old Fort Brooke, at the head of Tampa Bay. The fort is now in ruins, and is used as a park by the city.

Several of the remains of the labors of the "Mound Builders" are found here.

Tampa is quite a popular resort, and boasts of a million-dollar hotel.

The city has considerable commercial intercourse with the West Indies, and has many cigar factories.

Indian Hill, southeast of Tampa, is noted for the great heaps of shells, some of which are over 600 feet long and 25 feet high.

JACKSONVILLE.

Jacksonville, a commercial city and a famous winter resort, is situated on the left bank of the St. John's River, about 15 miles from the ocean. It is an ocean port, and exports large quantities of lumber, oranges, cotton and sugar.

Over 60,000 tourists and invalids visit Jacksonville during the winter season. The St. John's River is navigable for 200 miles above Jacksonville, and steamers ply daily between Jacksonville and Palatka.

ST. AUGUSTINE.

St. Augustine, the earliest European settlement in America, is on the east coast of Florida, about two miles from the ocean. The island of Anastasia lies at the entrance to the harbor, and furnishes a sort of shell concrete that is easily quarried and dressed, and which hardens upon exposure to the air.

This substance, which is called *coquina*, is used in building the first story of the two-storied houses, and was formerly used in paving the streets. In those early days,

vehicles were not permitted upon the streets, and they were so carefully swept that they would not soil the daintiest satin slippers worn by the Spanish ladies.

The town, you remember, was first built in 1565, by Menendez. Since that time it has been destroyed, or nearly so, many times

This quaint, old town has more of the appearance of a Spanish or Italian city, than of one belonging to the United States. On account of its congenial climate, healthful location, and interesting old buildings and ruins, it has become quite a popular resort for tourists and invalids, especially during the winter months.

The fort of St. Mark's, begun in 1656, and finished in 1756; the venerable Roman Catholic cathedral, and the old convent of St. Mary's, are among the interesting buildings.

The streets are all quite narrow, the widest being but twenty-five feet in width. One of the streets, over a mile long, is only fifteen feet wide, and another is only twelve feet in width. Along these narrow streets many of the buildings have portions of their second stories jutting out over the street, so that persons in the second stories are, in many places, able to shake hands across the street with their neighbors. The advantage of these narrow, flue-like streets, in a semi-tropical climate, is very marked.

KEY WEST.

Key West (Bone Island), so called on account of the abundance of human bones found there when first discov-

ered by the Spaniards. The tradition was that some of the native tribes were driven from one key to another, and finally almost annihilated in a great battle on Key West.

Key West was an important military and naval station during the Mexican and Civil War.

The hitherto small population was greatly increased by emigrants from Cuba, in 1869.

Key West is the metropolis of Florida, and manufactures great quantities of cigars. Besides cigars, sponges form the principal article of export.

The Florida keys consist of rock, covered with a soil formed by decayed vegetable and marine growths.

Key West has an excellent harbor, and is strongly fortified, as it guards the best entrance to the Gulf of Mexico.

EVERGLADES.

The Everglades should not be thought of as a marsh or swamp, but as a shallow lake with a rock bottom and overgrown with grass, which reaches several feet above the water. There are many islands in this vast region, some of which are inhabited by survivors of the tribe of Seminole Indians. The water is drinkable, and many fish abound in the channels, which the natives have made for their canoes.

A short distance to the northward is Lake Okeechobee (big water), whose exact dimensions are not known. The lake is shallow, the water good, and there are plenty of fish and water fowl.

SINKS.

From the region of the Suwanee River, westward, many "sinks" are found. They are peculiar natural wells, varying in diameter and depth, and are always connected with a subterranean stream. The waters of the underground rivers wear away the overhanging limestone rocks, until the weight of the rock causes it to cave in, when the *debris* is either carried off by the stream, or it may be sufficient to dam the subterranean river, and cause its waters to come to the surface, and thus form a river or lake where none existed before. This whole region seems to be honey-combed by underground streams and lakes.

Alachua (The big jug without a bottom), was the name the Indians gave to one of the largest of these "sinks." It is located near Gainesville.

SPRINGS.

Florida is noted for its large number of springs.

Many of them are large, and noted for their remarkably clear waters.

Silver Springs, southwest of Palatka, discharges daily over three hundred million gallons of water, pure as crystal—a volume of water sufficient to float a large steamer.

Tradition says that DeSoto visited this spring in 1539.

Blue Spring, nearly due west of Silver Spring, is 350 feet wide, and over 25 feet deep. The color of the water varies from blue to green.

Wakulla (Mystery) Spring, near Tallahassee, is another of the most noted springs. It is over 100 feet deep, with absolutely transparent water. Fish, turtles and alligators can be seen swimming, in perfect security, far below the surface.

REVIEW TOPICS.

1. Name States touching Atlantic Ocean.
2. Name the capital of each State.
3. Name the metropolis of each State.
4. List all the rivers in regular order.
5. Name the boundary rivers.
6. Name 10 places noted for their interesting historical associations.
7. Name and locate 12 lakes.
8. Name and locate 10 cities noted for manufacturing.
9. Name and locate 10 cities, noted for their educational advantages.
10. Name 10 mountains and peaks.
11. List 10 bays.
12. Give the *soubriquets* of 10 cities.
13. Name 8 summer resorts.
14. Name 5 winter resorts.
15. Name and locate 5 wonders of nature.
16. Sketch the Hudson and Mohawk Rivers.
17. Name 10 of the leading productions of the Southern States.

18. List the manufactured products of the North Atlantic States.
19. Give a full list of minerals.
20. Name 10 noted men, and the towns made famous by them.
21. List and locate 10 noted buildings.
22. Bound, by block method, Massachusetts and Tennessee.
23. Tell about the springs, lakes and "sinks," of Florida.
24. Name and locate 10 cities named in honor of prominent persons.
25. Which State leads in commerce? In manufacturing? In mining?

A SUGGESTION.

One of the best things a teacher can do, to instruct the children, is to direct them to look for the causes of things; to enforce a habit of gathering facts, by observation and by reading; to help them to arrange, systematically, the knowledge so found.

The teacher will be remembered for the impulse given toward broader views, and a firmer grasp of learning. Geography affords a free scope for philosophy. What makes cities?

Countries and cities become great in proportion as they control the interchange of the commerce of the world.

We find noted cities wherever the products of the *fixed East* have been exchanged with the *ever moving West*.

The old caravans formed cities on their routes.

New routes left the old commercial cities to wither and die. Water navigation formed new locations as trade centers. There are reasons for the location of each city that ever has been, or is now, of note in geography or history.

The *why* is worthy of careful consideration.

MISSISSIPPI.

Miss. 1817.	"Bayou State." "Tadpoles."	{ Location.	
		{ Gulf of Mexico.	
		{ Mississippi Sound.	
		{ Rivers.	{ Tennessee.
			{ Tombigbee.
			{ Pearl.
			{ Mississippi.
			{ Yazoo.
		{ Cities.	{ Vicksburg.
			{ Jackson.
			{ Natchez.
		{ Products.	{ Animal.
			{ Vegetable.
			{ Manufactured.

SUGGESTIVE KEY WORDS.

- 206. Land of Leees.
- 207. Terrapin farms.
- 208. The Yazoo Fraud.
- 209. Cane Hills.

- 210. Mississippi Bottoms.
- 211. Great Father of Waters.
- 212. Silt.
- 213. River of Ancient Ruins.

QUERIES.

- 226. What is a terrapin?
- 227. What was the Mississippi Bubble?
- 228. Which race predominates in Mississippi?
- 229. What battle fields in this State?
- 230. Did buffaloes ever roam over the Southern States?
- 231. Which is the longest river in the world?
- 232. Is it true that the Mississippi River runs up hill?
- 233. What does the word Mississippi, mean?
- 234. Where was Jeff Davis' home?
- 235. Who is called "The Daughter of the Confederacy"?
- 236. To which State did Mississippi once belong?

ITEMS OF INTEREST.

VICKSBURG.

Vicksburg, the metropolis of Mississippi, is situated on a bluff of the Great River, a little below the mouth of the Yazoo River, and 400 miles above New Orleans. It is surrounded by a rich country for cotton and other agricultural products. The city has many fine buildings, and a variety of manufacturing interests. It is noted as a cotton market, but more especially for the siege which occurred here during the Rebellion. Read carefully the account of the surrender

of Vicksburg, in your histories. Find out how the city was approached and how they lived in the city.

Tell of the running of the batteries, etc.

PALMYRA BEND.

Below Vicksburg there was a noted bend in the river.

It was thirty miles around, and across the neck not much over one-fourth of a mile. The average fall of the Mississippi river is four inches per mile, hence, when the current began to run across the neck, it soon wore a channel which became one mile wide and one hundred feet deep.

Relate General Grant's experience in changing the course of "Father of Waters."

NATCHEZ.

Natchez, the second city in population, is about 275 miles above New Orleans. It is built on a bluff 150 feet above the river, and affords a splendid view of the immense cypress swamps of Louisiana.

A portion of the city is situated on a narrow strip along the river, at the foot of the bluff, hence goes by the name of "Natchez-under-the-Hill." The upper part is known as "Natchez-on-the-Hill." On the bluff is a National cemetery, and a beautiful park. The name Rosalie was first given to this place, but the Natchez Indians destroyed the fort and massacred the people.

It was once the capital of the State. The main business here is the cotton trade.

OYSTER BEDS.

Near Pass Christian, in the Mississippi Sound, is one of the largest oyster beds in this part of the Gulf. It is over one mile wide and about 10 miles in length. This oyster bank supplies the canning factories of the Mississippi coast, and furnishes a large quantity of oysters used in the Crescent City.

Fifty vessels are busy gathering oysters, in the fishing season. The canned products are shipped north to the interior cities, and sold at good prices.

FISHING.

Mississippi City has been famous for the fine mackerel fishing. The Spanish mackerel is a much finer fish than his cousin of the northern seas. It is one of the most delicately flavored of the fish species.

The silver fish makes the most interesting sport of any found in the Gulf. Few ever forget their experience with a fish of this kind, and fewer yet ever safely land the first *tarpon* hooked by them.

Bass, sea trout, pompano, red fish, and sheep-head are all plentiful.

MOUND BUILDERS.

Many mounds are found in this State, in different places. The largest and most interesting mound is at Seltzer Town. It is 600 feet by 400 feet at the base, and 40 feet high. The corners were in harmony with the cardinal points of the compass.

Dr. Dickerson, the explorer, found skeletons, ashes, vases, and sun-dried brick, two feet thick, having on each the print of a human head.

A group of mounds, in Chicasaw county, were surrounded by a wall enclosing six acres.

WALNUT HILLS.

These hills are a few miles above Vicksburg, on the east bank of the river.

They rise boldly, with swells and gullies, to nearly the height of 500 feet.

It forms one of the most beautiful landscapes on the Lower Mississippi.

LEVEES.

Between the Yazoo and Mississippi Rivers, there is a network of bayous and small streams.

All this country of 60 miles width in places, was submerged for weeks, and even months, in times of floods, before a system of works began to "fence" in the water.

The side channels were cut off and embankments were built many miles along the river. These levees have cost over 100 millions of dollars, which was obtained from the United States Government, State and private parties.

Previous to the Rebellion, Louisiana had spent \$24,000,000; Mississippi \$14,500,000, and other States smaller amounts.

The levees are divided into districts, and over a million of dollars are annually expended in keeping them in repair.

Below the mouth of the Missouri, the Mississippi flows over a more nearly level bed, the current becomes sluggish and much of the sediment, held heretofore in solution, is deposited along its course.

This sediment fills up the bed of the river, and makes it necessary for the levees to be built higher and higher, year after year. This makes the breaks more dangerous, and on the lower Mississippi the steamboats are actually above the low lands adjoining the river.

ALABAMA.

Ala. 1819. "The Cotton State." "Lizards."	Location.	
	Comparative size.	
	Gulfs.	{ Mexico. { Mobile.
	Rivers.	{ Tennessee. { Chattahoochee. { Mobile. { Alabama. { Coosa. { Tallapoosa. { Tombigbee. { Black Warrior.
	Mountains.	{ Cumberland. { Blue Ridge.
	Cities.	{ Mobile. { Montgomery. { Selma. { Birmingham. { Huntsville.
	Products.	{ Animal. { Vegetable. { Mineral.

SUGGESTIVE KEY WORDS.

214. Cane brakes.
 215. Spanish Moss.
 216. Muscle Shoals.
 217. DeSoto.
 218. Horse Shoe Bend.

- 219. Fort Mimms.
- 220. The Paint Rocks.
- 221. The Suck.
- 222. Natural Bridge.

QUERIES.

- 237. What is the origin of the name Alabama?
- 238. Where was the first seat of the Confederate Government?
- 239. How much seacoast has this State?
- 240. What Indians once lived here?
- 241. Locate the battle-fields in Alabama?
- 242. Which is the most populous race, the white or black?
- 243. What revenue does Alabama receive from her oyster industry?
- 244. How are good roads made in southern Alabama?
- 245. Where is the largest fruit nursery in United States?
- 246. What ex-Vice-President was arrested on Alabama soil?
- 247. What is an Alabama gopher?

MOBILE.

Mobile, the metropolis, is the only seaport of the State. It is situated on a sandy plain, sufficiently elevated to afford the city good drainage.

It is the outlet of 2,000 miles of navigable waters, and of the greatest cotton regions of the United States. One of the leading industries is the manufacturing of lumber, especially

cypress shingles. The naval store supplies are important. The coal trade is increasing rapidly.

The city is abundantly supplied with pure water, from springs six miles distant.

The United States Marine Hospital is located here. Its history should be read, as it figures prominently with the Indians, Spanish, French, British and Americans. Near here is the noted African village, which contains the survivors of the last ship load of slaves ever brought to our country. The Emancipation Proclamation freed them before they were sold.

BIRMINGHAM.

This town of 26,000 people contained less than 5,000 in 1880. The iron industry is the principal business. Six miles distant is Red Mountain, estimated to contain 500,000,000 tons of iron ore. The Warrior coal field, the largest in the State, is near at hand. Pig iron is produced at a cost of nine dollars per ton, and over 2,000 tons are manufactured daily. The number of employes engaged in works of all kinds, is over 22,000. The State criminals are used in the mines.

A veritable "Birmingham of America."

Huntsville, Decatur, Gadsden, Sheffield, are all prosperous towns in northern Alabama.

ANNISTON. (ANNIE'S TOWN.)

Anniston is another town of recent growth, situated in the heart of the iron regions. The ore is mined from the

mountains and the hills, which surround the town, without any underground work. Here was a furnace which supplied the Confederates with iron during the Rebellion.

The town is supplied with pure water from an artesian well. Anniston has the largest cotton mill in the State, and the only steel bloomery in the South. Charcoal furnaces, and Coke ovens, are important interests. Here are the largest pipe works in the United States, which produce 200 tons of pipe daily.

Houses, schools, churches, stores, etc., were built by the men who owned the mills, for their employes.

MASSACRE ISLAND.

Dauphine Island lies near the entrance to Mobile Bay. It was the seat of a French settlement, under Bienville. From the great number of human bones found there, it was named Massacre Island. Here was located for several years the capital of the French colony of Louisiana. Fort Gaines is on this island, which, with Fort Morgan, on Mobile Point, guard the entrance to the bay. The passage is three miles across and over 20 feet deep.

LOUISIANA.

La. 1812.	{	"Pelican State."	Location.	
		"Creoles."	Comparative size.	
			Gulf of Mexico.	
			Lakes.	{ Pontchartrain. Borgne.
			Rivers.	{ Pearl. Mississippi. Red. Sabine.
			Cities.	{ New Orleans. Baton Rouge. Shreveport.
			Products.	{ Animal. Vegetable. Mineral.
			Manufactures.	

SUGGESTIVE KEY WORDS.

- 223. Acadian Coast.
- 224. Shaking Prairies.
- 225. Mardi Gras.
- 226. Crescent City.
- 227. New Orleans Exposition.
- 228. The Garden of Louisiana.
- 229. Levees.
- 230. Crevasses.

- 231. Louisiana Lottery.
- 232. Mafia.
- 233. The Passes.
- 234. The Picayune.
- 235. Glucose.

QUERIES.

- 248. What are counties called in Louisiana?
- 249. What are the *Coulees*? *Rigolets*?
- 250. What is a bayou? Lagoon?
- 251. Why was Pearl River so named?
- 252. Why are there few good harbors on the gulf coast?
- 253. In what production does Louisiana lead all other States?
- 254. How many States have been made from the original Louisiana?
- 255. What city has cemeteries above ground?
- 256. How many parishes of Louisiana are subject to inundation by the overflow of the Mississippi River?
- 257. What is a delta?
- 258. What fish is called "The King of the Gulf?"
- 259. What words mean "One-Eyed Lake"? "Bridge of the Coach Train"?
- 260. What were the boundaries of Louisiana, when purchased in 1803?
- 261. How was the State formed? (Geologically).
- 262. How are the people of New Orleans supplied with water?

263. Does the sun ever shine directly over the heads of the people of New Orleans? Why or why not?

A SUGGESTION.

Write all you know about sugar. Molasses.

Lay this paper away, then read up for one week the subject of sugar cane, its history, care and manufacture. Try writing again, and compare with your first effort. These subjects are purposely omitted.

NEW ORLEANS.

New Orleans, the Metropolis of Louisiana, and the largest cotton market in America, is situated on the Mississippi River, over 100 miles above its mouth, and 1,200 miles below St. Louis.

The city is built in the shape of a letter S, on the left bank of the river.

There is a levee twenty-six miles in length, by 15 feet wide, by 14 feet high, and surrounding the city, to protect it from inundation. Parts of the city are below the highwater mark of the river.

There are ditches in the streets from which the water is pumped by steam power. New Orleans has a number of canals for business use.

This city is the largest sugar market in the United States.

Sugar is stored in immense sheds, where it is heaped up, like coal in a yard. Spaniards, French, Italians, Mexicans, Indians, Creoles, Chinese, Germans, Irish, Northerners and

Westerners, all come together and jostle one another, in the busy pursuits of life. There are over 2,000 different manufacturing establishments within the city. A few of the chief buildings are the Custom House, United States Branch Mint, Cathedral of St. Louis, St. Charles Hotel, the City Hall, and Charity Hospital.

Mardi Gras, or Shrove Tuesday, the greatest carnival in the United States, is observed here. New Orleans has suffered several times from the ravages of yellow fever.

New Orleans is the natural *entrepot* of one of the richest regions of the world, and commands over 15,000 miles of steamboat navigation.

Read up the historical associations connected with this place.

It is the twelfth city of United States in population, and has nearly one-quarter million of inhabitants.

MOSS.

The long moss of commerce is almost wholly a product of Louisiana, although it is found in the lowlands of all the Gulf States. It is known by the name of Spanish Moss, Gray and Long Moss. Its native home is in the branches and tops of living trees, which grow in the swamps. It is rarely found north of 33° north latitude.

It revels in the darkest recesses of the everlasting swamps, and the dismal cypress groves. It drifts from the tops of the cypress, and festoons, with its gray drapery, the other trees of the swamps.

The moss needs the tree simply to keep it in the air.

It is said that it feeds on the elements in the air, and thus purifies the atmosphere.

No scenery in nature can convey a more solemn appearance, to a traveler, than a moss-covered swamp, shutting out the brightest sun, so as to make twilight at noon. The great moss region is all southwest Louisiana, wherever swamps exist.

The moss is gathered by hundreds of men, both white and black, who make a business of this work.

It is then dried, baled and shipped to the moss factories.

The factories undo the bales, sort, cleanse, and grade the moss, ready for the market.

The moss is shipped to all parts of United States and Canada.

Large quantities are sent to Germany and France.

It is used in making mattresses, cushions, car-seats, stuffing chairs, and for all purposes to which hair was applied.

THE SALT MINE.

On Petit Anse Island is one of the famous rock salt mines of the world. This island lies about 100 miles west of New Orleans. The salt is very nearly pure. The mine has been bored to a depth of 65 feet and no signs of a bottom, and the extent is over half a mile square as proved by borings, and it may extend much farther.

Earth covers the salt from 10 to 30 feet in depth.

Miners drill holes into the solid salt, then blast as they do rocks. The salt is then crushed in mills and placed on the market.

During the Civil War the Confederates obtained salt from this source.

The miners have found the bones of a mastodon in the earth above the salt.

SULPHUR MINE.

Eighty miles west of the salt mines is an immense mine of pure crystalline sulphur. The sulphur is 100 feet in thickness and lies over 400 feet below the surface of surrounding country.

GUINEA GRASS.

This grass was brought from Africa to Jamaica less than 200 years ago. It has spread over many of the West Indies and has been grown with success in Florida and Louisiana.

The grass grows 8 feet high and can be cut three times in one season. It makes fine feed for cattle and horses.

The tea shrub will grow here. Experiments have proved this fact.

SHREVEPORT.

This city is on the west bank of the Red River, about 500 miles from its mouth, and 20 miles below the Great Raft.

It is situated in the midst of a productive country and the cotton, hides, wool, and other commercial articles, give a business exchange of \$20,000,000 annually.

There are more colored people here than whites.

Highest temperature 102°; lowest, 5° above zero.

Average rainfall, 52 inches.

RED RIVER RAFT.

The great raft in Red River once extended nearly 45 miles.

It is an immense collection of driftwood and trees which have lodged in the river.

In 1872 the United States government undertook to remove the drift, and in November, 1873, a navigable channel was opened. This gives an outlet to a rich cotton country above Shreveport.

PASSAGES FROM LONGFELLOW'S EVANGELINE.

In 1755, the village of Grand Pre, in the Province of Acadia, or Nova Scotia, was broken up by general Winslow, under orders from the King of England, the property of the Acadians forfeited to the Crown, and 253 of their houses were set on fire at one time. Among others, Basil, the Blacksmith, the father of Gabriel, had proceeded to Opelousas, in St. Landry, and Evangeline followed Gabriel, her lover, with her guide, the Father Felician. Passing down the Mississippi, as they approached bayou Plaquemine:—

"Level the landscape grew, and along the shores of the river
 Shaded by China trees, in the midst of luxuriant gardens,
 Stood houses of planters with negro cabins and dove cots.
 They were approaching the region where reigns perpetual summer,
 Where through the Golden Coast, and groves of orange and citron,
 Sweeps with majestic curve the river away to the eastward.
 They, too, swerved from their course, and entering the bayou of Pla-
 quemine,

Soon were lost in a maze of sluggish and devious waters,
 Which, like a network of steel extended in every direction.
 Over their heads the towering and tenebrous boughs of the cypress
 Met in a dusky arch, and trailing mosses in mid air,
 Waved like banners that hung on the walls of ancient cathedrals.
 Deathlike the silence seemed and unbroken, save by the herons
 Home to their roosts in the cypress trees returning at sunset,
 Or by the owl, as he greeted the moon with demoniac laughter.
 Lovely the moonlight was, as it glanced and gleamed on the water—
 Gleamed on the columns of cypress and cedar sustaining the arches,
 Down through those broken vaults it fell as through chinks in a ruin.

* * * * *

Thus ere another moon they emerged from those shades, and before
 them

Lay, in the golden sun, the lake of the Atchafalaya.
 Water lilies in myriads rocked on the slight undulations,
 Made by the passing oars, and resplendent in heart the lotus
 Lifted her golden crown above the head of the boatman.
 Faint was the air with the odorous breath of magnolia blossoms,
 And at the heat of noon: and numberless sylvan islands,
 Fragrant and thickly embowered with blossoming hedges of roses,
 Near to whose shores they glided along, invited to slumber.

* * * * *

Thus he spake to his guests, who listened, and smiled as they listened:
 Welcome, once more, my friends, who so long have been friendless
 and homeless,

Welcome once more to a home that is better perchance than the old
 one.

Here no hungry winter congeals our blood like the rivers;
 Here no stony ground provokes the wrath of the farmer,

Smoothly the plowshare runs through the soil like a keel through the water—

All the year round the orange groves are in blossom, and grass grows More in a single night than a whole Canadian summer.

Here, too, numberless herds run wild and unclaimed in the prairies.

Read the whole story, it will richly repay you.

The land of beautiful scenery, of glassy lakes and bays; of splendid prairies and noble forests; of pleasant skies and gentle breezes; is the land where Evangeline sought her lover Gabriel, as described by the poet in "A Tale of Acadia."

PRODUCTS.

The fruits of Louisiana are: Oranges, lemons, limes, bananas, pineapples, Japan plums, figs, quinces, pears, peaches, cherries, grapes, pawpaws, persimmons, crab apples, strawberries, mulberries, besides nuts of various kinds.

The bottom lands are excellent for the production of sugar, cotton, rice, corn, sweet and Irish potatoes, peas, tobacco, melons, hay and oats.

Louisiana is not rich in mineral resources, but sulphur, gypsum salt, coal peat, iron, and various clays, are found here.

The forest trees are the oak, elm, ash, locust, cypress, sassafras, mulberry, walnut, hickory, pecan, maple, magnolia, poplar, pine, buckeye, willow, and others.

Stock of all kinds thrive here. Oysters, fish, and water game, are abundant in their season. Sea turtles are found in large numbers on the islands.

Deer, bear, panther, fox, opossum, raccoon and otter, are found here. Alligators are found in the rivers. There are a few kinds of snakes.

The silk worms will thrive in this State. The mulberry leaves are their best food.

Silk culture was carried on by the early French settlers.

Four and one-half pounds of Louisiana cocoons make one pound of silk. The silk worm season lasts two months.

TEXAS.

Tex. 1845.	{	" Lone Star State." " Beefheads."	Location.	
			Area.	
			Gulfs.	{ Mexico. Galveston.
			Rivers.	{ Canadian. Red. Sabine. Trinity. Brazos. Colorado. Nueces. Rio Grande. Pecos.
			Mountains.	
			Cities.	{ Galveston. Houston. Austin. San Antonio. Brownsville. Sherman.
			Products.	{ Animal. Vegetable.

SUGGESTIVE KEY WORDS.

- 236. Alamo.
- 237. Staked Plains.
- 238. Northers.
- 239. Yucca.
- 240. Mesquit.
- 241. Hog-wallow.
- 242. New Philippines.
- 243. Knights of the Golden Circle.
- 244. Pan-handle.
- 245. Mezquite.
- 246. Chapparal.
- 247. Cross Timbers.
- 248. Arroyos.
- 249. The Island City.

QUERIES.

- 264. What is the meaning of the word Texas?
- 265. To what country did Texas formerly belong?
- 266. What town is partly in Texas and partly in an adjoining State?
- 267. In what month is the Texas wheat harvest? Corn harvest?
- 268. When did the slaughter of a few pigs nearly ruin the Republic of Texas?
- 269. The dispute over what territory caused the Mexican war?

- 270. To what time belt does Texas belong?
- 271. What State leads in the production of cotton?
- 272. How is fresh meat shipped in summer time?
- 273. Why is Texas called the "Lone Star State"?
- 274. Where did the last fight of the Rebellion take place?
When?

OUR GREAT COTTON INDUSTRY.

What an expanse of knowledge opens up in the one word "Cotton!" We read of thousands of millions of pounds of cotton brought to the mills, made into cloth, and sent out again. We call it one of the staple industries of our country, yet it is doubtful if we really have any idea of the magnitude which the cotton trade has attained of late years.

The planting of seed begins in Texas in February, is later as one goes northward, closing in North Carolina and Tennessee not before early in May.

The plant resembles a bean in its early growth, shoots up two green leaves, and grows in a few days two or three inches high. More leaves soon appear, and in about three weeks the process of plowing and cutting out the superfluous plants begins, leaving only three or four in a bunch and the bunches being one or two feet apart.

There are many kinds of cotton. Those most cultivated are from two to four feet in height. The pods, when ripe, burst open and permit the cotton to be easily gathered. The seeds are entangled in the fibres and must be gathered with them. The fibres are called staples. If they are long,

the cotton is called long-staple cotton; if short, short-staple cotton.

The seeds are so entangled in the staples, that at the beginning of the cotton industry till after the invention of the cotton gin, by Eli Whitney, a Massachusetts man, about a 100 years ago, it used to take a man an entire day to separate one pound of lint from the seed; to-day one man superintends machinery that does 5,000 times as much.

Cotton fibres, though thinner than cobwebs singly, are yet tubes. In their growth on the seed, they become twisted or spiral, a great help in carding; for just as corkscrews twine together and point all one way after a good shake, so do the filaments of cotton after carding. Fast, but gently, there is sent off at last a thin, filmy cloud of gossamer, floating in the air, which gathers into an endless curl or sliver of pearly white cotton. Light as a wreath of smoke the sliver goes on to unite with its fellow slivers, and with them winds at length in a flat coil upon a metal reel.

From the cards the slivers travel to the drawing machines, and now we see why so many slivers are joined in one. The filaments of cotton are not all equal, and some of them break in carding, which would make bad thread. When the slivers are doubled over and over again, and when these doubled slivers, drawn out to the size of a candle wick, are doubled from sixteen to twenty thousand times, the stouter threads correct the weak ones. The finer the thread, the greater the number of card ends doubled into one. For fine

lace sixty thousand or more are thus doubled and drawn out into a single delicate thread.

Now the slivers are twisted and wound upon bobbins. Now to the throstle or spinning frame.

Seated on the bars of the throstle are long lines of reels of cotton thread looking like a row of white breasts of sea birds.

Round and round go the bobbins. Reels at the top give out the thread which is drawn finer and twisted, and bobbins below receive it until they are filled and others take their place.

Then there is the weaving. A good deal has to be done with the thread before it gets to the loom. As a rule, the twist, to form the *warp* or length-thread of the cloth, is throstle-spun, while the *weft*, or breadth-thread, which *wafts* to and fro with the shuttle, is spun upon the mule-frames. Women prepare the warp for the loom. The warping frames look not unlike giant clothes-horses, on the bars of which are placed bobbins without number. From all these bobbins the ends are culled and drawn, narrower and narrower, to a roller, just the width of the cloth to be woven. They pass on their way through slip gauges, to keep their exact distance apart; and, round the roller they wind, a sheet of cloth without the cross thread or weft. And now the long lines of thread look as though the giants might be having a tremendous game of "cradle."

The action of the loom upon the warp is to raise one set of alternate threads and to lower the other set, so as to divide

the warp into two sheets of thread. It is trying labor; every separate thread must be seen to, so that all shall rise and fall without a mistake, and at the same time travel on toward the shuttle.

The roll of woven cloth lengthens and lengthens as the shuttle flies to and fro, with the rap it gets on either side. Neither end will have it. Self-acting arms fling it backwards and forwards, as if in spite, and do not cease until the cob is wound out.

Between the two separated layers of warp threads the weaver puts in, with shuttles, the weft threads across the warp at right angles, and fills up the breadth of the web. By means of treadles both warp and weft threads are beaten up; that is, pushed up together, so as to make the cloth firm and compact.

The whole story of cotton cultivation may be told now as Auguste de St. Hilaire wrote 300 years ago:—"All the planter has to do is to burn off the woods and plant his seeds at the proper season." This is all that is really necessary to prepare the soil, except the occasional chopping out of weeds or sprouts. But the great drawback is the picking, which requires such an immense number of pickers that the other crops are neglected, and up to within a short time ago there seemed to be no way out of the difficulty caused by the slow and wearisome toil of cotton crop picking, which, occurring as it does at the hottest season of the year, makes the process all the more toilsome and laborious, and

often subjects the planter to annoying delays from his negro helpers.

But again the inventive genius of a scientific mind comes to the aid of patient labor. A firm in Texas is now introducing a cotton-picking machine, the invention of Mr. Angus Campbell, which, after a thorough test in the cotton fields, through the picking seasons of 1890 and 1891, has demonstrated that it picks cotton at a saving of seventy-five to ninety per cent. of the cost of hand labor.

This may seem incredulous to those who have watched the process of cotton-picking, and know how delicate and intricate the operation is. But this machine has demonstrated its usefulness in the field, by doing work in the presence of thousands of witnesses.

It is difficult to give a lucid description of its construction. It is mounted on two wheels, and drawn by two horses directly over the row to be picked, the plants, if tall, being slightly bent to allow the machine to pass over.

The cotton is gathered by spindles, which, in series of nine, project from sixteen small cylinders, which revolve around a common center. At each revolution of this system of cylinders the spindles, which are furnished with brush-like surfaces, properly guarded, and are revolving on their own axis with great rapidity, are thrust between the branches of the plant, permeating every part, engaging the fibrous cotton, leaving the unopened bolls, blooms and leaves uninjured. After the spindles emerge from the plant they are presented to rapidly revolving brushes, which clean

them of cotton, an operation similar to the cleaning of gin saws.

The cotton is thrown by centrifugal force to the rear into the receptacle, which has a capacity of about seventy-five pounds, and is made of heavy wire netting, allowing the dust and dirt to escape, but retaining the fibre.

Each cylinder has an independent motion equal to about one-half a revolution on its own axis, which motion causes the spindles to remain relatively stationary to the plant while picking, and to enter and emerge from among the branches with the least possible disturbance, no combing or raking motion being produced.

A valuable feature is a series of ribs, through which the spindles pass immediately on emerging from the plant, and while yet loaded with cotton, these ribs serve the purpose of preventing any branches or hulls being carried through them, but allow the fibre to pass, and are formed of heavy steel wire twisted with bristles, so as to form what might be termed a large round brush.

Another feature of great value are the trailers. They are attached to the machine on each side, at the lowest point, and extend inward until they nearly meet, thus forming a carpet under the center of the machine, ready to catch any chance droppings of cotton, which are at once seized by the spindles and carried forward to the brushes, which throw it into the cage, while hulls, twigs and leaves, dropping upon the trailers, are simply thrown upon the ground.

The driver, while sitting in his seat, can raise or lower the whole picking apparatus.

The present cost of picking cotton is \$12.50 per bale; the machine is capable of doing it for about \$1.50, and the machines are expected to average over one hundred bales each in a season.

By the use of this picker the planter cannot only pick cleaner and more quickly, but he can do what he was never able to do before, extend his plantation, and pick every particle of cotton at a very small cost.

The introduction of the cotton picker will begin a new era in the cotton industry of the United States, and promises to create a furor in manufacturing movements. It is destined to revolutionize cotton raising in the South. With the present labor-saving machinery, cultivators and cotton choppers, one man, with two horses, can cultivate a hundred acres of cotton, and if he picks ten of it after it is cultivated, he does well; but now, after he has planted and cultivated his hundred acres of cotton, with the same two horses with which he made the crop, he can hitch to his cotton picker, which costs not over \$150 or \$200, and pick the entire hundred acres as quickly as he could give it one plowing

Think of the increase in the cotton trade, since Eli Whitney invented the cotton-gin! Think of what it will be in future years, with the help of this latest invention!

Cotton picking by machinery! It seems as though inventive genius could go no farther; and yet the introduction of

the cotton-gin was looked upon as a marvel of science at the time.

Mr. Campbell's name will go down to posterity among those who have made the "lessening labor problem" the study of their lives, and surely no name deserves to be more gratefully remembered than that of the man who has given us the cotton picker, and with it a greater stimulus to our great cotton industry.—[Revised by permission of the Lone Star Cotton Picking Co., from their circulars.]

ITEMS OF INTEREST.

SAN ANTONIO.

San Antonio, one of the oldest Spanish towns in America, and the largest city in Texas, is built upon the site of the famous, historical Fort Alamo.

It is said to have more the appearance of a country town in Spain, than of even a modern town of France or Germany.

It contains a Roman Catholic College and Cathedral, a United States arsenal, large flouring mills, and several factories.

It has an extremely healthful climate. The inhabitants paradoxically say, "If you want to die here you must go somewhere else."

Tell your pupils about the massacre of Alamo, and about the noted "Davy Crocket," who met his death at that time.

GALVESTON.

Galveston, the most important seaport of Texas, is pleasantly situated on Galveston Island, on the south coast of Texas, at the opening of Galveston Bay, into the Gulf of Mexico. The harbor, though safe, is rather shallow. The island is only about 5 feet above the sea level.

The manufacture of flour and oil, and the pressing of cotton, are the chief industries, next to its commerce.

The island is bordered by hard, smooth beaches, which form magnificent drives.

DALLAS.

Dallas, on the Trinity River, in the northeastern part of the State, is an important railroad center and manufacturing town.

Over 130 factories, of various kinds, employing more than 3,000 hands, are in successful operation. Textile fabrics, flour, harness and lumber, are the principal articles manufactured.

AUSTIN.

Austin, the capital of Texas, is situated on the Colorado River, near the center of the State. It is the shipping point for the produce of about 40 counties surrounding it.

A dam 1,100 feet long, and 60 feet high, across the river, affords abundant water-power, which is utilized to furnish the city with water and light, and to furnish motive power for manufacturing industries.

The Capitol, next in size to the Capitol at Washington, is built of red Texas granite, and is one of the largest public buildings in the world.

The State University, and various State benevolent and charitable institutions, are located in Austin.

WACO.

Waco, one of the growing manufacturing cities, is situated on either side of the Brazos River, near the center of the State.

It is well supplied with all of the modern metropolitan conveniences, paved streets, water works, electric lights, electric street car lines, etc.

It is an important shipping point for wool, cotton, livestock and grain. The principal articles of manufacture are, woolen and cotton goods, cotton seed oil, vehicles, flour, harness and ice.

Other rapidly growing towns are: Sherman, which has the largest cotton gin in the world; Gainsville, near the Indian Territory boundary; El Paso, on the Rio Grande, noted for its smelting works, trade with Mexico, and meat preserving industry; and Fort Worth on the Trinity River, west of Dallas, near the coal and iron mines, noted for the manufacture of steel, ice and flour.

HOUSTON.

Houston, named after the famous Sam Houston, a former governor, is situated at the head of navigation and tide-

water, on Buffalo Bayou. It is the terminus of a number of diverging lines of railway. A ship channel, 200 feet wide and 12 feet deep, from Houston to the Gulf of Mexico, was recently constructed by the United States Government.

Its being the distributing point, for all sorts of supplies, for eastern and southern Texas, gives it considerable commerce. Lumber, cotton and hides, are the chief exports.

The Galvestonians call the inhabitants of Houston "mud turtles," and the Houston people reply by calling the citizens of Galveston "land crabs."

MUSTANGS.

The wild horse of America, although now native to the soil, is descended from the tribes of wild horses that still roam the plains of Central Asia. When the discoverers of this continent first landed, there were no horses anywhere in North or South America. Centuries before, the horse had been introduced into European countries, from Asia, and had become common all over that continent.

Columbus, on his second voyage, brought horses to the New World, and Narvaez landed a number of horses in Florida, in 1528.

Cortez took horses with him to assist in the conquest of Mexico, as did Pizarro, in his conquest of Peru. The natives were greatly affrighted when they beheld these strange animals. At first they supposed that the man and the horse were one complete creature, something like the

centaur of which we read in ancient fable. And when they saw the rider dismount, and disengage himself from his steed, their amazement knew no bounds.

In time, the savages learned that the horse was an animal that had been subdued by man, and that it was a separate creature; but they long dreaded the horse of the Spaniards as a beast of prey. And when the horses escaped from their masters, and made their way into the freedom of the forest, as they did after a space, the natives avoided them as something to be shunned. The quarreling Spaniards neglected their steeds, which soon found homes on the plains of Mexico, South America, and the unexplored interior of North America. From these escaped animals have sprung the wild horses of America. The mustang, as the native horse of the North American continent is usually called, is generally of a bright chestnut color. The horses marked with odd colors and patches are called "pinto," or "painted," by the Mexicans, and "calico," by the Americans. The mustang is smaller than the domesticated American horse; for we must remember that the larger horses now found in our stables are the direct descendants of later importations from Europe.

ARKANSAS.

Ark. 1836.	"Bear State." "Tooth Picks."	{	Location.	
			Comparative size.	
			Lake St. Francis.	
			Rivers.	{ Mississippi. Missouri. White. Red. Washita.
			Mountains, Ozark.	
			Cities.	{ Little Rock. Hot Springs. Ft. Smith.
			Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

- 250. Arkansas diamonds.
- 251. Lost Hills.
- 252. Field crops.
- 253. Natural resources.
- 254. Shoals.
- 255. Climate.

QUERIES.

275. What are the healing properties of Hot Springs?

276. How was Lake St. Francis supposed to have been formed?

277. Which State exceeds Arkansas in the production of zinc?

278. In Pike county there is an alabaster mountain. What is alabaster? Its use?

279. Under what different names has Arkansas been known?

280. In what battle of the Rebellion in this State did the Indians take a hand?

281. Who was the first white man to traverse this region?

282. What place, at the head of navigation, on the Arkansas River?

283. Where is Arkansas City?

284. How far north are Alligators found?

ITEMS OF INTEREST.

HOT SPRINGS.

These celebrated springs have a world-wide reputation.

They were discovered about the year 1807. There are between 75 and 100 springs, varying in temperature from 90° to 150° Fahr. The town first built was located on what was supposed to be private land, but subsequently proved to be public land.

By a court decision, 5,000 people were dispossessed of their homes, but were allowed to file their pre-emption claims, and thus become owners.

The Hot Springs Mountain, on which are located the famous springs, was reserved from sale. This reserve enclosed an area of 245 acres. The bath houses pay an annual rental to the United States Government of \$5 for each bath-tub in use.

A receiver collects rents for the Government.

It is estimated that fifty thousand invalids and other persons visit these springs annually.

Thousands visit who have no diseases. They go simply to see the marvelous work of nature, where the Great Physician has stored so much healing property for afflicted mankind.

Many wonderful cures of rheumatism, gout, stiffness of joints, mercurial diseases, scrofula and diseases of the skin, have been performed by the use of these waters.

A heavy fog hangs over the springs and upon the mountain sides.

LITTLE ROCK.

Little Rock, the capital, metropolis, and chief railroad center of Arkansas, is situated on the Arkansas River, about 250 miles above its mouth. The site is on a small cliff of 40 to 50 feet elevation, hence the name.

Two miles above, on the opposite side of the river, are cliffs four or five hundred feet high, called Big Rock. Lit-

tle Rock is the seat of a United States arsenal, of the State penitentiary, of the State institutions for the blind, deaf and dumb, and of a United States District Court.

It contains many schools and churches.

Population, in 1890, about 26,000.

ARKANSAS RIVER.

The source of the Arkansas River is in Colorado, at a height of 10,000 feet above sea level.

It is over 2,000 miles in length.

Near its source it passes through a canon 40 miles long, and through the prairie region the water entirely disappears in immense beds of sand.

The White, Canadian, and Cinnamon, are the principal branches.

Near the mouth, there are levees to restrain the spring floods.

In times of flood, small steamboats ascend to Fort Gibson, in the Indian Territory. The basin of the Arkansas River comprises nearly 200,000 square miles.

SOILS.

The soils are of various kinds, viz.: The high and bottom lands of the Arkansas, the black alluvium, sandy and clayey loams, the sandy and clayey mixtures, the black waxy land, and the red lands.

There are immense tracks of submerged bottom lands, which can be brought under cultivation, by a system of drainage, and levees along the Mississippi River. The uplands are varied by rolling prairies, which are generally well watered. The principal products of Arkansas are agricultural.

The soils are so various, and the climate such, that almost anything can be raised.

In the Washita valley there is an immense bed of superior oil stone.

The northeastern part of the State consists of continuous swamps, bayous and shallow lakes, covered with cypress and gum trees.

The timber regions protect from the northers of the North, and the hot winds of the South.

The soil varies from the most fertile to the most barren.

The mammoth Hot Spring, in Fulton County, discharges 8,000 gallons of water per minute.

Fort Smith commands the trade of the Indian Territory. The United States Court here has jurisdiction over that region.

TENNESSEE.

"Big Bend State." "Butternuts." Tenn. 1796.	Bound Tennessee.	
	Divisions.	{ East Tennessee. { Middle Tennessee. { West Tennessee.
	Rivers.	{ Mississippi. { Tennessee. { Cumberland.
	Mountains.	{ Allegheny. { Cumberland. { Missionary Ridge. { Lookout.
	Cities.	{ Nashville. { Memphis. { Knoxville. { Chattanooga.
	Products.	{ Animal. { Vegetable. { Mineral.

SUGGESTIVE KEY WORDS.

- 256. Volunteer State.
- 257. State of Franklin.
- 258. Hermitage.
- 259. Garden of Tennessee.
- 260. District of Washington.
- 261. Convict Labor.
- 262. Big Bone Cave.
- 263. The Enchanted Mountains.

264. Devil's Pulpit.

265. Stone Grave Men.

QUERIES.

285. What minerals does Tennessee afford?

286. What county of Tennessee is circular in form? Why?

287. What noted summer resort in Tennessee?

288. Locate 10 battlefields of the Rebellion in this State.

289. Contrast the three sections of Tennessee surface, climate and productions.

290. Which colony once claimed the territory now called Tennessee.

291. Which two presidents are buried in Tennessee? Where?

292. What city has the largest inland cotton market in the United States.

293. What city was depopulated in 1878 by yellow fever?

294. What is Bessemer steel?

295. What was the capital of Tennessee from 1796 to 1816?

296. What is the most important river port between St. Louis and New Orleans?

ITEMS OF INTEREST.

A TYPICAL STOCK FARM.

"Belle Meade," a large and typical estate, lies on Richland creek, a beautiful, clear stream of water, surrounded by noble hills and broad valley lands, deep set in blue grass.

5,250 acres comprise the farm. It has a park of 460 acres, in which are over 200 deer. Extensive improvements have been made since the war, for the care of thoroughbred horses.

There are 100 brood mares, besides celebrated stallions, and sixty yearling colts, which will sell from \$600 to \$1,000 each. There are also a herd of Shetland ponies, Cashmere goats, Southdown sheep, and herds of blooded cattle.

Two creameries produce one-half ton of butter each month.

"Belle Meade," has its own saw mill, grist mill, carpenter and blacksmith shops, all run with a full force. Previous to the war there were 60 head of buffalo and 30 elk here, but the soldiers found them suitable to their wants and taste. Most of the hired help in the place consist of the former slaves of General Harding.

The help is so kindly treated that they cannot be lured away from the place. There are twenty-four miles of stone fencing.

On the highlands are found blue grass and grazing ; on the lowlands, corn, oats, hay, etc.

Fruit orchards are extensive and the varieties choice.

NASHVILLE,

The capital and metropolis of Tennessee, is situated on both sides of the Cumberland River, north of the center of the State. It is the hardware, dry goods and drug center of the South.

\$20,000,000 are invested in manufactories.

The wholesale trade amounts to over \$100,000,000 annually.

Nashville is the first hardwood market in the country.

The iron interests are extensive, one firm, representing \$9,000,000 in mining and manufacturing, in Tennessee and Northern Alabama.

There are many schools, among which is a medical college for negroes, the only institution of the kind in the world. Read your history for facts concerning Nashville during the Rebellion.

CHATTANOOGA.

Chattanooga is located on the Tennessee River, about six miles from the boundary line.

Lookout Mountain overlooks the city from the south, and Missionary Ridge from the east.

Chattanooga was one of the objective points in the Rebellion, and the battles fought in this vicinity will be of interest to note carefully.

There is a National cemetery here where 13,000 northern men found graves. This city lies on the natural highway of traffic between the East, West and South.

Nine lines of railroads enter Chattanooga. The coal and iron industry of East Tennessee center here.

This is the first place in the South where the Bessemer steel was manufactured.

The mills and factories number over 100, besides many small industries. This valley is fertile and well supplied with pure water. The mountain tops are heavily timbered.

One of the United States Signal Service stations is located here.

LOOKOUT MOUNTAIN.

Lookout Mountain is located in the northwest corner of Georgia, the northeast corner of Alabama, and on the southern boundary line of Tennessee.

The elevation is 1,600 feet above sea-level.

This mountain is almost a perpendicular cliff, directly over the Tennessee River, and commands a view that baffles description. From the point it is said that seven States may be seen. A narrow gauge railroad extends to the top of the mountain. The mountain extends south many miles in Alabama. There are two hotels, a college, cottages and cabins, on the summit of the mountain.

Hooker's famous "Battle Above the Clouds," will forever make Lookout Mountain a noted name in United States history. The surface of the mountain is well wooded, and has numerous springs. There are many curious rock formations here.

HARRIMAN.

Harriman is a new city, 50 miles west of Knoxville, at Emery Gap, a natural gateway through the Cumberland plateau.

This town was founded by General Clinton B. Fisk, in 1890, and inside of one year it contained 4,000 people. Harriman is in the center of 1,000 square miles of land rich in iron, coal and other minerals. It has an abundance of valuable timber, and a bountiful supply of pure mountain water. Mills, factories and industries of many kinds are found here. There is a total prohibition of the liquor traffic in the title deeds.

The scenery is beautiful and the climate healthful.

STUDENT'S CAVE.

This cave is in the Raccoon Mountain, the mouth of it is in Tennessee, although the greater part is in Georgia.

The entrance is about half-way up the mountain side, and the descent to the floor is 70 feet perpendicular.

The walls are of solid rock.

The cave winds in a southwesterly direction, and is supposed to form a connection with the great Nicojack cave, which is 20 miles distant.

It was first explored in 1848, by the students of Mercer University, hence the name.

TENNESSEE RIVER.

The Tennessee River is formed by the junction of the Clinch and Holston Rivers, which rises in Southwest Virginia.

Including the largest tributary, the Holston, the Tennessee River is over 1,000 miles in length. It is navigable for

large steamboats, from the Ohio to Muscle Shoals, about 260 miles. There are small steamboats above the shoals, which ply up the river for 500 miles. The Big Bend includes a circuit of 300 miles in Alabama.

The upper Tennessee has some very beautiful scenery.

This river drains a territory of 40,000 square miles.

Reelfoot lake is the largest lake in the State.

It was formed during the earthquake of 1811.

On Duck River there is a pre-historic stone fort, which is an object of interest to tourists.

PERTINENT QUESTIONS.

1. Are you reviewing continually?
2. Do you vary your exercises?
3. Are your pupils making notes of the work done?
4. Do they consult the Gazetteer daily?
5. Can they sketch, in a few minutes, any state studied?
6. Do you outline *every* State for study, or have you taught your pupils *to work alone* in this matter?
7. Can your pupils change the queries to suggestive key words?
8. Can you change the key words to items of interest?
9. Do the class recite topically?
10. Are you teaching your pupils to *see* the places mentioned, or do they see only black spots and lines on a map?

AN EXERCISE ON PRODUCTS.

The following plan has been tried, with good results, by the authors.

Write the names of products upon slips of paper, or cardboard, thus:

Rice.

Sugar.

Tobacco.

Oranges.

Hand them to the class and require them to state what they know concerning them. If but little is known let them take them to their desks, and study the topics for future work. It is surprising how much can be said, in one or two minutes, when you *know what* you are to say, and say *all* you can. When all have recited upon the topics, turn them over and let the pupils draw promiscuously. This will add variety. The following list is suggested: Corn, wheat, coal, gold, lead, iron, nickle, sponge, peaches, lemons, glass, etc., etc.

The following points may be noted about each subject:

1. Where found?
2. Use?
3. How obtained?
4. Exporting and importing.
5. Commercial port.
6. History.

OHIO.

Ohio. 1802.	Buckeye State." " Buckeyes."	Location.	
		Comparative size.	
		Lake Erie.	
		Rivers.	Ohio.
			Muskingum.
			Scioto.
			Miami.
			Maumee.
		Cities.	Sandusky.
			Cincinnati.
			Columbus.
			Cleveland.
			Toledo.
			Sandusky.
		Products.	Dayton.
			Animal. { Domestic.
			Vegetable. { Grains.
			Mineral. { Fruits.
			Coal.
			Iron.
			Salt.
			Oil.
			Lime.
			Etc.
			Manufactured.

SUGGESTIVE KEY WORDS.

- 266. The Bay City.
- 267. The Fire Lands.
- 268. Western Reserve.
- 269. National Road.
- 270. Queen City of the West.
- 271. The Forest City.
- 272. Paris of America.
- 273. Black Swamp.
- 274. Blennerhassett Island.

QUERIES.

- 297. How many miles of lake shore?
- 298. What is the most prolific fishing stream in United States?
- 299. In what part of Ohio are the vineyards located? Why?
- 300. Where is the National Normal School in Ohio?
- 301. Which city of Ohio manufactures large quantities of school crayon?
- 302. What is crayon? How made?
- 303. Which has the longer day, Cincinnati or New Orleans? Why?
- 304. Emery Arcade, in Cincinnati, is said to be the largest in United States. What is an arcade?
- 305. Where is the Central Nation Soldiers' Home located?

306. Name several noted men of Ohio.
307. What Presidents have Ohio furnished?
308. Where are the largest wagon works in the world?
309. Where is the largest fresh water fish-market?
310. In what productions does Ohio excel all other States?

ITEMS OF INTEREST.

CINCINNATI.

Cincinnati, the metropolis of Ohio, is pleasantly situated on the Ohio River, about midway between its mouth and source.

It resembles London somewhat by its river fogs, and the smoke of its foundries and factories.

In 1790 General St. Clair became governor of the Northwest Territory, and he it was that gave the city its present name, from the order to which he belonged. One portion of the city, which is densely populated with Germans, is known as "Over the Rhine." In this vicinity are the great breweries of Cincinnati.

The city is well supplied with public parks; one, the Eden Park, which is sometimes called the "Garden of Eden," contains 216 acres, and commands splendid views of the surrounding country, the river and city. The Suspension Bridge, which connects Cincinnati with Covington, is an object of interest. It stands 100 feet above low water mark,

and cost about \$2,000,000. A few of the noted buildings here are the Government Building, County Court House, Chamber of Commerce, Masonic Temple, Exposition Building, Music Hall, numerous noted schools and colleges, and many magnificent churches.

Cincinnati stands among the great manufacturing cities of our country.

She makes what the people of Ohio and other States need, and so long as the river, railroads and canal exchange her products for the cotton of the South, the grain of North and West, the stock and dairy products of the blue grass region, her financial success and prosperity are assured.

In 1883 the Ohio River rose 66 feet above low water mark, destroying millions of dollars worth of property.

Eight square miles of Cincinnati were under water.

LAKE ERIE.

Lake Erie is elliptical in shape, and is the only one of the great lakes said to have any current. It is nearly 250 miles long by 40 miles average width, with an area of over 9,000 square miles. It is the most shallow of the great lakes, and the most dangerous of the fresh water seas. "The surplus waters of the *basins* of Superior, Huron and Michigan, flow across the *plate* of Erie into the deep *bowl* of Ontario." The principal tributaries are the Detroit, Raisin, Maumee, Sandusky and Cuyahogo Rivers.

The outlet is the Niagara River.

The harbors are: Dunkirk and Buffalo, in New York; Erie, in Pennsylvania; and Sandusky, Cleveland and Toledo in Ohio. The Lake was named from the Erie Indians (tribe of the cat), who were exterminated in a single day by the warlike Iroquois, but the name lives in the lake, town, canal and railroad.

Buffalo, named from the American bison, which roamed along the lake shore as late as 1720, is at the foot of the lake and has the largest harbor. The Erie canal connects with the lake here.

The city of Erie supplies the greater part of the coal used on the lakes. Navigation is closed in winter on account of ice.

Read in class the description of the battle of Lake Erie, from the histories, and of John Maynard, the pilot of Lake Erie. Look up the record of the Griffin, the first boat on the lakes. Tell of Johnson Island, where Confederate prisoners were confined during the Rebellion.

OHIO RIVER.

O-he-yo, the Wyandotte word means "Fair to look upon."

The French called it the La Belle Riviere.

The Ohio River is formed by the Alleghany (clear water) and the Monongahela (Falling-in-banks) Rivers. The river constantly changes its direction; every turn presents a new view, now a wall of hills, now a woody gorge, now beautiful meadows, now almost doubling back on its track; the

river actually running north, south, east and west, until a person, traveling on a boat, loses his bearing entirely, as the author can testify. The Ohio has the most uniform current of any river known; it never seems in a hurry; it loiters among the coal and iron fields of Pennsylvania, the hills of West Virginia, the farms of Ohio, and the meadows of Kentucky; it curves north to accommodate Cincinnati; it bends south to receive the twin rivers, and finally mixes with the Mississippi River, one thousand miles above the Gulf. Not like the rushing streams of New England, nor the sleeping, sluggish streams of the South, the Ohio has a character peculiarly her own. The French claimed the Ohio valley, and took possession by depositing leaden plates along the shores of the Ohio.

Three of these plates have been found, bearing this inscription: "In the year 1750, we, Celeron, commander-in-chief of New France, to establish tranquility in certain Indian villages, have buried this plate on the Beautiful River as a monument of renewal of possession which we have taken of said river and its tributaries, and of all the land on both sides; inasmuch as the preceding kings of France have engaged it, and maintained it by their arms, and by treaties, especially by those of Ryswick, Utrecht and Aix-la-Chapelle.

The Ohio is about 1,000 miles long, and carries a greater volume of water than any other tributary of the Mississippi.

Give the names of principal tributaries and cities on the Ohio River.

CLEVELAND.

Cleveland is the second city in size in the State, and the northern terminus of the Ohio canal. The city is built on an elevated plain, overlooking the lake. The Cayahoga River passes through the city, affording excellent harbor facilities. A breakwater, costing \$1,200,000, west of the river's mouth, incloses 180 acres of water.

The city is supplied with lake water. The Standard Oil Company have their headquarters here. In Cleveland are found 5 ship yards, 20 oil works, 150 establishments of steel and iron, extensive lumber yards, numerous schools, colleges of high order, and magnificent buildings, both public and private. In 1852 the first railroad whistle was heard in Cleveland, and in 1890 the population was 262,000.

Cleveland produces more refined petroleum than any other city in the world. (Possibly Pittsburgh excepted.)

“PORKOPOLIS.”

Cincinnati, geographically located in the center of one of the best stock farming regions, received the above name on account of its pork packing.

It is said that 50 men will slaughter over 1,500 hogs in a day in a single establishment. Each man has his own special work to perform, the labor being proportioned among the pen-men, knockers-down, stickers, scalders, bristle-snatchers, scrapers, shavers, gamble men, gutters, hose-boys,

slide-boys, splitters. cutters, weighers, cleavers, knife-men, ham-trimmers, shoulder-trimmers, packers, salters, branders, book-keepers, porters and draymen.

These men, once under headway, dispose of a hog in less than one-half minute.

COLUMBUS.

Columbus, the capital of Ohio, is a flourishing city, located near the center of the state.

Not including Washington, Columbus is not excelled by any city in the United States for its numerous and important public buildings.

The State Capitol is one of the largest in the United States.

The State penitentiary covers six acres, not the largest, but one of the safest in the country.

The deaf and dumb, the blind, and lunatic asylums are located here. A United States arsenal, and other Government buildings are situated on handsome and well wooded grounds, which form a suburb of the city. The canal and fifteen lines of railroad center here. In 1887 \$190,000,000 were invested in the coal business, iron industry, and other manufacturing interests. The State House well is 2,775 feet deep, and the temperature of the water is 91 degrees Fahr.

MOUND BUILDERS.

It has been estimated that 10,000 mounds exist in this State alone. In 1845 a careful and scientific survey was begun, and continued for two years

At Fort Hill was one noted mound, occupying the summit of a hill nearly 500 feet high.

The wall and ditch inclosed forty-eight acres.

Trees were growing on this wall which are estimated to be 1,000 years of age.

On the Little Miami is another work, called Fort Ancient, in which the walls are four miles in length and twenty feet high in places. The State of Ohio has bought the site of this fort, and it will be preserved as a public park.

In the Scioto Valley is another one embracing one hundred and twenty acres, and near its mouth are earthworks extending at least twenty miles. The Newark works are more extensive and better known than others. They cover hundreds of acres.

INDIANA.

Ind. 1816.	{	"Hoosier State." "Hoosiers."	{	Location.
				Comparative size.
				Lake Michigan.
				Rivers. { Ohio. Wabash. White. Maumee. Kankakee.
				Cities. { Indianapolis. Terre Haute. La Fayette. Ft. Wayne. Richmond. New Albany. Evansville.
				Products. { Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

275. The Railroad City.
276. Crescent City of Indiana.
277. The Quaker City of the West.
278. Epsom Salt Cave.
279. Indiana Block Coal.
280. The Drowned Lands.
281. Cranberry Marshes.
282. The Tall Sycamore of the Wabash.

QUERIES.

311. What is lime? How made? Its uses?
312. What is the only lake port of Indiana?
313. How is glass made?
314. What towns of Indiana are supplied with natural gas?
315. What noted Indian battle ground in the state?
316. Where was the first settlement made?
317. Who are the literary men of Indiana?
318. Tell of the "Hoosier Schoolmaster" and his trials.
319. What is worthy of note about Delphi?
320. In what things does Indiana excel all other States?
321. Which portion of Indiana is hilly?
322. What is the largest city in the United States not on navigable waters?

ITEMS OF INTEREST.

INDIANAPOLIS.

The capital and metropolis of Indiana is located near the geographical center of the State. It is on the old National Road, and in the direct line of communication between the East and West, hence enjoys excellent commercial advantages. Fifteen lines of railroad center here.

An abundance of pure water is obtained from a subterranean lake.

Many beautiful public parks, Government buildings, State Institutions, all combine to make Indianapolis one of the

handsomest cities of the United States. The grain, the mercantile and manufacturing interests are important and extensive. Indianapolis is in the vicinity of the coal fields, and the region noted for black walnut.

In public and sectarian schools, universities and benevolent institutions, Indianapolis is well equipped.

EVANSVILLE.

Evansville is the second city of Indiana in size.

It is a port of entry and controls a large river trade. There are six coal mines within the city, and it is one of the largest hardwood markets in our country. The manufactories number nearly 500, which includes almost everything made of wood and iron.

The population is over 50,000.

NEW ALBANY.

New Albany is situated below the falls of the Ohio, and nearly opposite Louisville, Kentucky. The water power is second to none in the West.

Manufacturing is the chief industry of the city.

The largest glass works in the United States are located here.

The fine polished plate glass is a specialty of these works.

The wholesale business is extensive. The river trade exceeds twenty millions annually.

SOUTH BEND.

South Bend, the second city in the State in manufacturing, is located on the St. Joseph's River. One wagon factory covers 83 acres, and manufactures 40,000 wagons annually.

The same company have carriage works covering three and one-half acres. There are plow works, clover-huller works, steel skein works, toy wagon and croquet factory, besides mills of many kinds. The entire output for 1890 aggregated nearly \$11,000,000.

The city is supplied with water from sixteen artesian wells. Gravel banks in this vicinity are used in making excellent roads.

MARION.

Marion is a prosperous city of modern growth.

There are twenty-one wells of natural gas within the city limits.

Twenty-seven factories of various kinds are located here.

One pressed brick factory makes 20,000,000 bricks annually. Here we find the Soldiers' Home and a Normal School.

WYANDOTTE CAVE.

This cave is the most remarkable natural curiosity in the State. It rivals in some respects, the more famous Mammoth Cave of Kentucky.

The cave is dry and the stalagmites and stalactites exceed in size and beauty those of the Mammoth cave.

The Mammoth Hall is 350 feet long by 245 feet high, and contains an elevation 175 feet high, on which stand several large stalagmites, one of which is pure white and is called Lot's Wife.

The "snow banks" are formed by fine, loose crystals of alabaster. In places the stones and floors are covered with the crystals of epsom salts.

HAMER'S CAVE.

Hamer's cave is entered on the side of a hill forty-five feet above the valley, and is situated about two miles east of Mitchell. The floor is level, six feet wide and covered with a swift stream of water eight inches deep, which at places is increased to twenty feet. A boat must be used to explore it and hence very few ever venture into its passages. Three-fourths of a mile from the door the whole stream rushes down an incline only three feet wide with great violence and a noise that fills the entire cave. The boat may be carried above this rush of waters and after passing along for about three hundred feet a person comes to what is called the grand cascade, beyond which the cave is low, wet and full of rushing water. Eyeless fish, crawfish and other crustaceans are caught in this cave, which has an outlet into the grand amphitheatre in which is situated a mill which is run by a power given by the water carried from the mouth of the

cave for a distance of over one hundred yards. The top of the hill over this cave extends about sixty feet above the opening into the cave, and traveling about a quarter of a mile eastward the explorer finds himself at the entrance of Donnelson's cave, from which is discharged a large stream of water, which was used by the former proprietor to drive a woolen, grist and saw mill many years ago.

CENTER OF POPULATION.

When the first U. S. census was taken in 1790 the center of population was located at a point about 23 miles east of Baltimore. From that time to 1890 the center always traveled westward, but sometimes a little north and again a little south of the preceding center. In 1890 the center of population was located, by the census geographer, at a point a short distance southwest of Greensburg in southern Indiana. This town is about 500 miles due west of the center of population in 1790, making an average annual rate of about five miles. The center of population in 1890 was marked by a stone monument ten feet high and about four feet square at the base. It was built by the Chicago Herald, and has on its face this inscription: "Center of population, 1890. Latitude 39° , $11'$, $56''$; longitude 85° $32'$, $53''$." Erected by the Chicago Herald.

ILLINOIS.

Ill. 1818.	"The Prairie State." "Suckers."	Border.	{ States. Waters.
		Size.	{ Length. Width. Area.
		Number of inhabitants.	
		Rivers.	Name and describe 8.
		Lakes.	Name and locate 2.
		Cities.	Name, locate and tell important facts about 10.
		Canals.	Name and locate 2.
		Products.	Animals. { Domestic. 5. Wild. 5.
			Vegetable. { Grains. 5. Fruits. 10. Timber. 10.
			Minerals. 5.
			Manufacturers. 5.

SUGGESTIVE KEY WORDS.

- 283. American Bottoms.
- 284. Hennepin Canal.
- 285. Black Hawk's Tower.
- 286. The Flower City.
- 287. The Gem City.
- 288. The Evergreen City.
- 289. Cave in the Rock.

- 290. The Great Ship Canal.
- 291. Latter Day Saints.
- 292. The Garden City.
- 293. "The River Divine."
- 294. Earthquake 1811.
- 295. "Egypt."
- 296. Indian Mound.
- 297. The Lead City.
- 298. World's Fair.

QUERIES.

- 323. What colonies owned the North-West Territory?
- 324. What was the "Great Bird of Alton?"
- 325. What were the Black Laws?
- 326. How much land did the Illinois Central Railroad receive from the State?
- 327. What returns, to the State, does the Illinois Central make every year?
- 328. Does Lake Michigan ever freeze over?
- 329. How much lake coast in Illinois?
- 330. What and where are the Trembling Lands?
- 331. Where is the longest continuous street-car line in United States?
- 332. In what respects does Chicago lead the world?
- 333. Where is coke manufactured in Illinois?
- 334. What is the proper name for the Okaw River?
- 335. Who were the "Prairie Banditti?"
- 336. What names in Illinois recall historical characters?

337. What names are of Indian origin?
338. How is the Illinois and Michigan Canal kept in repair?
339. Where are the watch factories in Illinois?
340. Name the 10 largest cities in this State.
341. Does Illinois own any of the Ohio River? Of the Mississippi River? Of Lake Michigan?
342. How are the foundations laid for the large buildings in Chicago?
343. Where is petroleum found in this State?
344. Sketch at least five important railroads in a map of Illinois, and locate the cities on each.

ITEMS OF INTEREST.

STATE INSTITUTIONS.

Educational—

University of Illinois, Champaign.

State Normal Schools, { Normal.
Carbondale.

Charitable—

Asylum for the Blind,
“ “ “ Deaf and Dumb, } Jacksonville.
“ “ “ Insane.

Asylums for the Insane, { Kankakee.
Elgin.
Anna.

Institute for the Feeble Minded, Lincoln.

Eye and Ear Infirmary, Chicago.

Soldiers' Home, Quincy

Soldiers' Orphans' Home, Normal.
 Reformatory and Penal—
 State Reformatory, Pontiac.
 State Penitentiaries, { Joliet.
 { Chester.

“SUCKERS.”

Travelers, in early days, when the season was dry, were troubled to find water on these great prairies.

In low places, swamps and small streams, the crawfish make deep holes in the ground, down to water, during the dry season.

Persons setting out on a long journey provided themselves with long, hollow reeds, which they thrust into the crawfish holes, and thus procured a supply of generally pure water.

The word “suckers” is derived from the manner in which the supply was obtained.

Abstract of Illinois.	{	Mound Builders.
		Indians.
		Florida, 1543.
		Virginia, 1606.
		Louisiana, 1682.
		Virginia, 1763.
		County of Illinois, 1779.
		Northwest Territory, 1787.
		Territory of Indiana, 1800.
		Territory of Illinois, 1809.
		State of Illinois, 1818.

THE MOUND BUILDERS.

The earliest settlers of Illinois can be traced here and there by earth mounds, by stone implements, and by other relics of their work. Many mounds are found along the Mississippi, Fox, and Rock Rivers. In the "American Bottoms" are scores of mounds of different sizes and forms. At Cahokia is one that covers six acres, and it is estimated to contain 20,000,000 cubic feet. Almost over the entire State are found arrow-heads, spear-heads, awls, axes, knives, etc. Archæologists have many times dug into and explored these mounds, to find specimens of their art. They have found bones, tools of flint and copper, many stone weapons, and carved work in great quantities, such as pipes, vases, pitchers, beads, etc. These people selected the best farming country in America for their homes, and such sites for their structures as civilized men select for their great cities, viz: Cincinnati, St. Louis and Milwaukee. They were farmers, no doubt, judging from their location; hunters and warriors from their weapons; religious from their altars, temples and idols; and they worked in stone, shells and copper, as shown by their specimens. This interesting subject must be left, for space forbids.

INDIANS.

The Illinois Indians, composed of several families, numbering all told 12,000 strong, were located within the present limits of the State. The different families were the

Kaskaskias, Cahokias, Tamaroas, Michiganies, and the Peorias. The Saxes, Foxes, and Kickapoos warred with them and drove them southward. These Indians were friendly to the French, and assisted them in their wars and explorations. When the English obtained control, the Indians sold out, moved west again and again, until now what remains of them may be found on a reservation in Kansas and Indian Territory. Draw an outline map of Illinois and locate the Indian tribes, by writing the name on the portion occupied by each. Tell of the Indian legends, of stories connected with Illinois, of their habits and customs, and their treatment by the whites.

Here are a few of the Indian chiefs' names: Black Part-ridge, Black Bird, Shabbona, Black Hawk, White Hair, South Wind, Pipe Bird, Sun Fish, Great Speaker, Little Sauk, etc.

FLORIDA.

The Spanish claims extended northward indefinitely. By the explorations of DeSoto, and the reports of his followers, this name has been sometimes applied to territory as far north as Illinois.

VIRGINIA.

The grant of land, given by King James, to the London Company, embraced the southern portion of this State, while that of the north was claimed by the Plymouth Company.

LOUISIANA.

The French explored this region first, and named it Louisiana, in honor of their king. Mobile was the first capital, and D'Artaquette its first governor. Crozat, Cadillac, and others followed. The famous Mississippi Company, under John Law's management, came next. By him Ft. Chartres was built, the strongest fortification in the Mississippi valley. Ere the bubble burst Illinois had a population of over 5,000 white people.

In an outline map locate the following French forts and settlements: Kaskaskia, Cahokia, Prairie du Rocher; Forts Chartres, St. Louis, St. Phillip, and Creveceour.

Trace, by dotted lines, the routes of Marquette, Hennepin, LaSalle and Joliet, on the map.

Tell of the Jesuit Fathers: Mermet, of Kaskaskia; Mar-est, of Peoria; Charlevoix, Binneteau, and others.

VIRGINIA.

After the close of the French and Indian war, this region became a portion of territory controlled by the Virginia Colony. This did not last long.

COUNTY OF ILLINOIS.

The County of Illinois was formed in 1779, with Patrick Henry as its first governor.

NORTHWEST TERRITORY.

By the famous compact of 1787, this territory became separated from the Colonies. Marietta was the capital and General Arthur St. Clair the governor.

Review "The Ordinance of 1787," and explain how and why Dr. Manasseh Cutler succeeded in obtaining such provisions as it contains.

TERRITORY OF INDIANA.

When Ohio was ready for statehood, the remaining portion, west of the Wabash River, was known under the above name. W. H. Harrison was the first governor, with Vincennes for the capital.

TERRITORY OF ILLINOIS.

In 1809 this territory was formed, with Ninian Edwards as first governor. Kaskaskia was the capital.

ILLINOIS.

In April, 1818, the bill passed, admitting Illinois as a State.

Shadrach Bond was elected governor, and Pierre Menard lieutenant-governor. Vandalia was selected for the capital for twenty years. The first session of the State Legislature met in Kaskaskia, at a cost of \$13.50.

CHICAGO.

Chicago, the metropolis of Illinois and second city of the United States, is situated on the southwestern shore of Lake Michigan. It covers an area of over 185 square miles, and has a population of over 1,400,000.

The city was chartered in 1837, and contrasting with the present, it is safe to say it is the most remarkable city in the world for its rapid growth.

Being built upon a low, marshy plain, it became necessary to raise the city. This was done by one of the most extraordinary experiments ever undertaken anywhere in the known world.

Large hotels, immense business structures, and even whole blocks were raised by jack-screws to the required level, from six to ten feet.

The lake shore was filled in, the breakwater built, and artificial structures erected to keep out the water of the lake.

The city sewerage, which now flows partly into Lake Michigan and partly into the Illinois River, in time of low water is to be directed entirely by the Great Ship Canal through the Illinois into the Mississippi River.

The water supply is obtained from tunnels which extend two miles and five miles, respectively, under the lake to enclosures, where the water fills them through grated cylinders. The cribs mark the source of the water supply

Twenty-five lines of railroads center in Chicago. Elevated

railroads and street car lines lead to all parts of the city.

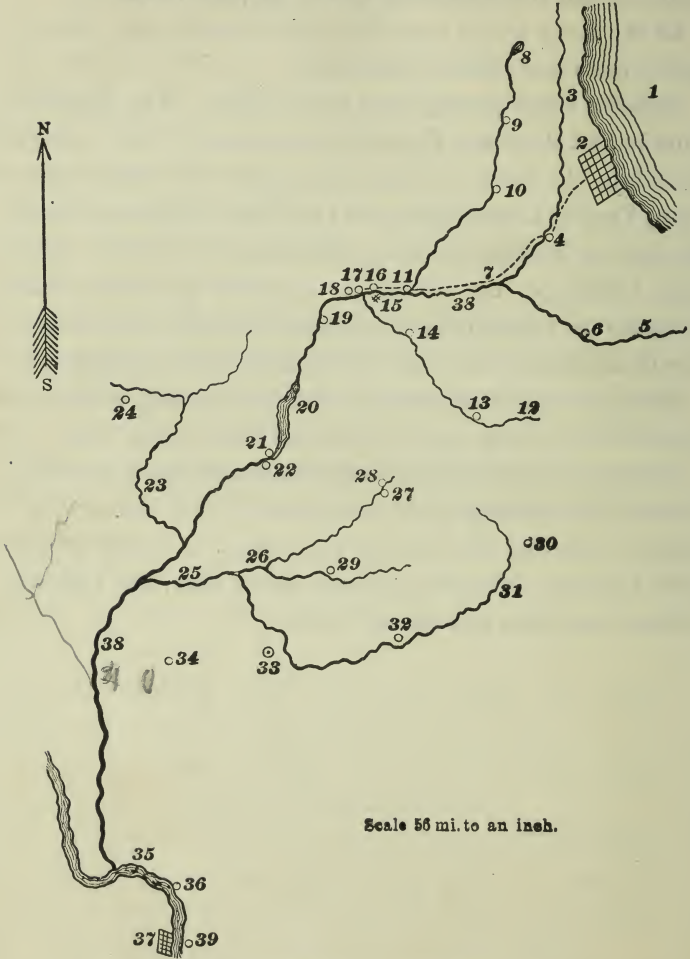
Of the many public buildings space forbids more than a mere mention of a few of them, viz:

Masonic temple, twenty-one stories high. The Auditorium, largest theatre in the world, the tower of which is 270 feet high; the Board of Trade, the market for Western produce; County Court House and City Hall, which cost about \$6,000,000; Tacoma, Rookery, Monadnock and other business buildings; the Postoffice valued at \$5,000,000; the large hotels, railroad depots, wholesale houses, retail stores, one of which has in its nine stories thirteen acres of flooring.

Six parks of Chicago contain over 2,000 acres, which are connected by drives 250 feet wide and thirty miles long.

There are many places of amusement, museums, theatres, Battle of Gettysburg, Libby Prison, etc. The historical incidents connected with the city that should be mentioned are Fort Dearborn Massacre, Chicago fire of 1871, the railroad strike, Anarchists and World's Fair.

SKETCH OF THE ILLINOIS RIVER.



Valley of the Illinois R.

KEY.

- | | |
|--------------------------|------------------------------|
| 1. Lake Michigan. | 21. Peoria. |
| 2. Chicago. | 22. Pekin. |
| 3. Des Plaines R. | 23. Spoon R. |
| 4. Joliet. | 24. Galesburg. |
| 5. Kankakee R. | 25. Sangamon R. |
| 6. Kankakee. | 26. North Br. of Sangamon R. |
| 7. Ill. and Mich. Canal. | 27. Bloomington. |
| 8. Fox Lake. | 28. Normal. |
| 9. Elgin. | 29. Lincoln. |
| 10. Aurora. | 30. Champaign. |
| 11. Ottawa. | 31. South Br. of Sangamon R. |
| 12. Vermilion R. | 32. Decatur. |
| 13. Pontiac. | 33. Springfield. |
| 14. Streator. | 34. Jacksonville. |
| 15. Starved Rock. | 35. Mississippi R. |
| 16. Utica. | 36. Alton. |
| 17. LaSalle. | 37. St. Louis. |
| 18. Peru. | 38. Illinois R. |
| 19. Hennepin. | 39. E. St. Louis. |
| 20. Peoria Lake. | |

A TRIP DOWN THE ILLINOIS RIVER.

The Des Plaines or Iroquois River rises in Wisconsin, and its junction with the Kankakee forms the Illinois River. It was named by the French from a species of maple which grows along its banks.

Along this river runs the Illinois and Michigan canal. It crosses the river at Joliet. In 1816 the Indians granted a strip of land for the purpose of a canal which the government was to construct. This canal was chartered in 1836 and opened in 1848 at a total cost of \$6,400,000. It is ninety-six miles long. Every alternate section for five miles each side of the canal was granted to aid in the construction. This land and the tolls paid out the expense in 1871. The tolls now more than pay the keeping of the canal in repair.

Who owns the canal? How is it controlled? What is the extent of business done?

Joliet was named after the French explorer. In this city are located the northern state penitentiary, the largest wire mills in the state, oatmeal and flour mills, the Illinois Steel Co., a plant which produces weekly 3,000 tons of steel rails, and the noted quarries, which have furnished stone for many public buildings in the State.

Joliet possesses a very fine court house.

The Kankakee River rises in Indiana and flows through a low, flat, marshy country, noted for its berry marshes and hunting and fishing grounds. Kankakee is the only city of note on this river. The stone quarries are valuable. It is the seat of an asylum for the insane.

Much of the barren and marshy region is being reclaimed by drainage and brought under cultivation.

Fox River is the first tributary of the Illinois River. It is the outlet of Fox Lake and flows through a fine country,

noted particularly for its dairy and agricultural products. The water power of this river is important.

Elgin is noted for its watch factory, which employs about 3,000 persons, who turn out between 400 and 500 watches daily. Cheese and milk condensing factories are found here. Special trains are run to Chicago called "milk trains," which supply the city from this dairy region.

Aurora is a thriving town on the Fox River. It contains the Chicago, Burlington & Quincy machine shops and has many factories of various kinds. The schools are of a high order and among the best in the State.

Near the mouth of the Fox River Ottawa is situated. This enterprising city contains glass works, cutlery works, a starch manufactory and other industries. It is a noted grain market.

"It is remarkable that the first discovery of coal in America, of which there is any account in a printed book, was made so far in the interior as Illinois, by Father Hennepin, over 200 years ago." Hennepin's Journal of 1698, locates a coal mine near Ottawa where coal comes to the surface along the bluffs.

A few miles below Ottawa on the north side of the river is Buffalo Rock, so called from the practice of the Indians decoying the buffaloes to this promontory and driving them over the bluff into the river. Still lower down the river is Lovers' Leap, with its Indian tradition, and the historic place called Starved Rock, which commemorates the last sad tragedy of the Illinois Indians.

Weakened by internal quarrels and diminished in numbers, the entire tribe was warred upon by the Ottawas, Shawnees, Kickapoos and Miamis. Outnumbered and worsted in a conflict on the prairie, they retreated to this bluff, where an attack could be easily repulsed.

From the summit of the rock they viewed the ruins of their village and crops of ripe corn, while, for fifteen days they famished for food and died of thirst for water which flowed at the base of the rock, about 150 feet below.

The haven of safety which they sought thus became their tomb and monument. In 1675 Father Marquette first saw the great village of the Illinois Indians, called Kaskaskia, situated on the plain opposite Starved Rock. La Salle fortified the rock in 1682 by building a palisade on the summit. He named it Fort St. Louis.

A company now own the rock and 360 acres of surrounding land. It is being fitted for a summer pleasure resort. A fine hotel and a number of cottages are found at the west base of the rock.

There is an excellent supply of artesian water found here. An American flag floats from a tower on the top of the rock, from which the view is picturesquely grand. There is soon to be an electric railroad built from South Ottawa to the rock.

Utica is built on the site of the first Indian Mission in Illinois, erected by Father Marquette in 1675.

It is also noted for its cement works.

A few miles below, the Vermilion River empties into the Illinois. Upon this stream are located Streator, noted for

coal mines and glass works, and Pontiac, the seat of the State Reformatory.

Near this river are Bailey's Falls and the famous Deer Park.

At the former may be seen the rainbow when the sun shines upon the spray as it falls over a precipice of some forty feet.

At the foot of the falls are some very large detached rocks that have been broken from the fissured ledge above.

Deer Park is so called from the custom of the Indians driving the deer into it and then slaughtering them. There is only one passage out and that only a few rods wide.

The walls are from forty to seventy-five feet in height.

Across the river from the mouth of the Vermilion is La Salle, and a mile below is Peru City.

These cities are sometimes called the "twin cities," although the citizens of La Salle are mainly Irish, while those of Peru are Germans.

At La Salle the Illinois and Michigan canal terminates.

Here are found the largest zinc works in America. The ore used is shipped in by railroad from Missouri and Kentucky. The coal trade is very important, as is also the glass industry.

Peru has a plow factory, zinc works, coal mines and large ice houses.

Passing down we reach the big bend of the Illinois River and in this turn the town of Hennepin is situated.

This town was once an important trading post, in the days before railroads. Just above the town the Hennepin Canal connects with the river. Webster, Van Buren and other celebrities have visited this place. Here was located one of the underground railroad stations in *anti-bellum* days. It was named after Father Hennepin.

A few miles below, at Henry, there is a government dam, to assist in the navigation of the river above. Steamboats pass the dam by means of a lock.

Toll is collected of all passing boats. Lower down we come to that beautiful expansion of the Illinois River called Peoria Lake.

It is about 20 miles in length, and from one-and-a-half to two miles wide.

Peoria, "the whisky city," is just below the lake. It is built on the site of old Fort Creve Coeur (Broken Heart). The fort built here was one of the first steps taken towards a permanent settlement in Illinois (1680). Peoria is noted for its corn market, its breweries, its distilleries, and its various manufactures. Peoria pays more revenue on distilled spirits than any other city in United States.

Pekin, still lower down, but on the opposite side of the river, follows in the foot-steps of Peoria, so far as industries are concerned.

Next we reach the mouth of a stream called Spoon River, on which is found Galesburg, in the midst of a good agricultural country.

It has large factories for cars, wagons, carriages, etc.

It is the seat of Knox College and Lombard University.

The Sangamon is the largest tributary of the Illinois River, and near its source we find Champaign. Champaign is located in the broom corn region of Illinois, and is the seat of the Illinois University.

Passing down the Sangamon we reach Decatur, which is located geographically in the center of the State.

The city was named in honor of Commodore Stephen Decatur. This city possesses most of the modern improvements that belong to metropolitan cities.

Decatur is the center of the great coal fields of Illinois. There are two shafts within the city limits. It is surrounded by the best corn land of the world. It is the birthplace of the Grand Army of the Republic. Post No. 1 was organized here April 6, 1866.

A large memorial hall is soon to be erected. Lincoln and Oglesby are two of her honored citizens. The commerce of this city will exceed \$6,000,000 annually. 2,500 people are engaged in manufacturing industries of various kinds. Decatur supplies the world with checkrowers and hog ringers.

The pressed brick and tile industry is important.

Forty miles west of Decatur we reach the capital of the State. The Capitol is the chief building, which cost about \$5,000,000.

It contains many objects of interest, such as Memorial Hall, museums of natural history and agriculture, State

Library, etc. It is heated by steam and lighted by electricity. The dome stands 365 feet high.

Watch making is the leading industry. The factory turns out 400 daily, and employs 800 men. The buildings cover 16 acres of ground.

The Wabash railroad machine shops are located here.

Thirteen coal shafts are in constant operation in this vicinity.

Lincoln's Monument and the memorials kept there, are well worth a visit. Lincoln's home is still kept much as he left it and is open to visitors.

On a branch of the Sangamon we find Bloomington, Normal and Lincoln.

The former is pleasantly situated on a rolling prairie, and is one of the prettiest inland cities of the State. Its industries are the coal mine, the C. & A. machine shops, extensive nurseries, and various manufactories.

It is the seat of the Illinois Wesleyan University.

Normal, only two miles north, is noted for being the seat of the State Normal School and Soldiers' Orphans' Home. Many Norman horses are raised here. The berry culture is important.

Lincoln is the seat of the Home for the Feeble Minded and the Lincoln University. Near here is a large farm owned by an English Lord, who rents it to tenants in a manner similar to the English plan.

West of Springfield, and some distance from the river, we find Jacksonville, "The Athens of the West." In 1829 the Illinois College was founded, the oldest in the State.

Besides the State Institutions, Jacksonville boasts of a Business College, The Illinois Female College and a Conservatory of Music. There are numerous manufacturing industries here.

Near the mouth of the Illinois River they sometimes have sand storms, and in a few localities there exists beds of quick-sands.

Below the mouth of the Illinois River, on the Mississippi, we find Alton, noted for its quarries, lime, fruit and coal. It is the seat of Shurtleff College. There are many bluffs along the river in this region.

East St. Louis is noted as a railroad center and a great manufacturing city. It is connected with St. Louis by two large steel bridges.

ROCKFORD.

Rockford, a flourishing manufacturing town, is situated on both sides of the Rock River, whose strong current is here spanned by six bridges. The city gets its water supply from several artesian wells. It is well supplied with the modern metropolitan necessities and conveniences.

ROCK ISLAND.

The city of Rock Island is built on the right bank of the Mississippi River, three miles above the mouth of the Rock

River and opposite Rock Island. The Mississippi is here spanned by several bridges. The principal business is the manufacture of lumber of various kinds.

The island of Rock Island is owned by the United States, and is the seat of the Central United States arsenal. It was formerly the site of Fort Armstrong, and was used as a prison for captured Confederates during the Civil War. The island is connected by bridges with Rock Island, Moline and Davenport.

MOLINE.

Moline, a few miles above Rock Island, has a beautiful and healthful location, immense water power from the rapids in the Mississippi River, and is noted for its numerous factories. The principal articles of manufacture are vehicles, agricultural implements and organs.

GALENA.

Galena is picturesquely built on several terraces on the Fevre River, about six miles from the Mississippi River. Steamboats can ascend the river to Galena. Considerable quantities of lead ore are mined in this vicinity.

General Grant lived at this place at the opening of the Civil War. A beautiful monument to his honor and memory was erected in the Galena Cemetery, in 1890. by his grateful and admiring fellow-citizens.

NAUVOO.

Nauvoo, pleasantly situated on high ground, on the east bank of the Mississippi, 14 miles above Keokuk, is noted for being founded and occupied by the Mormons. A

large and costly temple, which was erected by them, is now only a heap of ruins. The population before the expulsion of the Mormons, in 1846, was 15,000. It is now less than one thousand.

QUINCY.

Quincy, one of the large and growing cities of Illinois, is beautifully situated on a limestone bluff, on the right bank of the Mississippi River, about 170 miles above St. Louis.

Its manufactures are extensive and varied.

It has numerous elegant public buildings, and is the seat of the Illinois State Soldiers' Home. Over 700 veterans of the Civil War are here comfortably cared for by the State.

KASKASKIA.

Kaskaskia, the first town settled in Illinois, was founded about 1682. A mission station was established near Utica, Illinois, by Marquette, in 1675, and named Kaskaskia. A few years afterwards the mission and its name was transferred to where Kaskaskia now stands. Kaskaskia was the first capital of Illinois.

On the opposite bank of the Kaskaskia River, is Chester, which contains one of the State penitentiaries.

CAIRO.

Cairo, situated at the junction of the Ohio with the Mississippi River, is well located for commerce. The city is protected from inundation by immense levees.

A magnificent steel railroad bridge here crosses the Ohio River.

KENTUCKY.

Ky. 1791.	"Corn Cracker State." "Corn Crackers."	Location.	
		Comparative size.	
		Rivers.	{ Mississippi. Ohio. Tennessee. Cumberland. Green. Kentucky. Big Sandy.
		Cumberland Mountains.	
		Mammoth Cave.	
		Cities.	{ Louisville. Frankfort. Lexington. Covington.
		Products.	{ Animal. { Horses. Mules. Cattle. Hogs. Sheep.
			{ Vegetable. { Grains. Fruits. Timber.
			{ Mineral. { Coal. Iron. Lead. Salt. Marble.

SUGGESTIVE KEY WORDS.

- 299. Blue Grass Region
- 300. Salt Licks.
- 301. The Garden of Kentucky.
- 302. Swiss Colonies.
- 303. Land of Cane.
- 304. Big Bone Licks.
- 305. The Falls City.
- 306. Daniel Boone.
- 307. Transylvania.
- 308. Water lime.
- 309. The Pride of Kentucky.

QUERIES.

- 345. What are "oak knobs?"
- 346. In what part of the State are the "Barrens?"
- 347. Who were the early pioneers of Kentucky?
- 348. What does the word Kentucky mean?
- 349. Repeat the State motto.
- 350. Why did no Indian tribe own the territory called Kentucky?
- 351. How can the coral formations in Kentucky be accounted for?
- 352. In what manner is the Mammoth Cave connected with the War of 1812?
- 353. Relate the troubles of the early settlers with the Indians.

354. Kentucky produces two-thirds of the hemp raised in this country. What is made of hemp?

355. What two noted Presidents were natives of Kentucky?

ITEMS OF INTEREST.

MAMMOTH CAVE.

This wonderful cave is in Kentucky, about 100 miles south of Louisville, and people are continually going to see it. It was first discovered in 1802. In 1809 it was purchased for forty dollars. It now belongs to nine heirs, each of which receive from it an income of \$1,000 annually. The Mammoth Cave is the largest known in the world.

The Cave contains hundreds of avenues, numerous rivers, many domes and pits, eight cataracts, besides a few animals and curious rock formations. Let us enter and take a trip into one of the world's wonders.

The fee is paid and we are furnished with overalls, blouses, flannel caps and a swinging lamp. As you enter you think a strong current of air is behind you, but it is really the "breath" of the cave.

The guide tells us that the temperature is 56 degrees, Fahr., the year round, and the cave inhales and exhales, as the temperature outside is above or below. As we proceed, hundreds of bats flit about and circle around our heads. These bats, a few rats, lizards, a strange kind of cricket, and some eyeless fish, constitute the animal life of the cave.

Nearly all the places are christened with names, such as: The Rotunda, The Chapel, The Haunted Chamber, Audubon Avenue, The Devil's Arm Chair, The Bottomless Pit, Bridge of Sighs, The Dead Sea, The Rivers Styx and Echo, The Star Chamber, Giant's Coffin, Kentucky Cliffs, and many others. The guides tell us the legends of some of these. In the Gothic Chapel with its bridal altar, a Kentucky belle was married to her lover, after having promised to marry no man on earth. She insisted she had kept her promise to the very letter, by marrying in this subterranean "Gretna Green." In the Haunted Chamber two Indian mummies were found, hence the name.

Wandering Willie's Spring was named from a blind boy who wandered into the cave, and when found was asleep beside the spring which bears his name.

McPherson's Monument is a rude pile of stone, built by the staff officers of that brave general. Stones are added to the pile by the General's soldiers and friends who visit the cave.

The stalactites of gigantic size, and stalagmites of fantastic forms, when illuminated by calcium lights, present a scene never to be forgotten.

TOBACCO.

Kentucky ranks first in the production of tobacco, and in the study of this State a good opportunity is afforded to know something about it; its history, growth and commercial importance,

It is a plant, a genus of the *solanaceæ*, or night shade family, and a native of America.

The early explorers introduced it into the old world.

Relate Raleigh's experiments and experiences It was used as money (the medium of exchange) in the Virginia colony at one time, and was grown in the streets of Jamestown.

The tobacco seed is first sown in beds, and propagated similarly to cabbage plants.

The plants are set out in rows, checked like corn ground, and from 4,000 to 7,000 plants are used on each acre.

It requires thorough cultivation.

Many insects prey upon this plant, among which are the larva of a sphinx, commonly known as the "big green worm," the common tobacco worm, and others. During the "worming" season constant care is required. "Priming" consists of destroying worm-eaten and soiled leaves. "Topping" is cutting off the top of the plant that the strength may go to the leaves. "Cutting" consists in severing the stalks near the ground, and when wilted so the leaves will not break, they are deposited in the tobacco house. The "curing" takes from 75 to 100 days, according to the process employed.

Assorting, stripping, bulking and packing, then follow.

Tobacco is known by the name of the country producing it. In this country it can be raised from the Gulf to the Great Lakes.

The yield per acre ranges from 600 to 1,000 pounds.

The raising of tobacco soon impoverishes any other than a very rich soil.

What are the medicinal effects of tobacco upon the body?

What common plants belong to the same family?

Under what different names and forms is tobacco sold?

What diseases are produced by the excessive use of tobacco?

Which is less injurious, smoking or chewing?

What was the Connecticut Blue Law concerning tobacco?

LOUISVILLE.

Louisville, the metropolis of Kentucky, is situated on the Ohio River, 150 miles below Cincinnati. The so-called falls of the Ohio are here, but they are simply a series of rapids.

The fall of the river is 27 feet in a little over 2 miles.

But little use is made of the water power.

The Louisville and Portland canal is 2 miles long, and is on the Kentucky side of the river. The canal has three locks and is capable of passing steamboats of 3,000 tons burden.

Since 1874, the United States government controls the canal, making it free to commerce except a small toll to keep up repairs.

Louisville rests on a plain with the hills for a background, and the Ohio River flowing rapidly in front.

This city is the largest tobacco market in the world.

The pork-packing, whisky distilleries, the tanneries and iron industries are all extensive.

Louisville is noted for its schools, especially its medical colleges. The public library of Kentucky has over 30,000 volumes, and a museum and natural history department of 100,000 specimens.

The population is over 161,000 (1890).

Louisville was named after Louis XIV, king of France.

At Louisville begin the double graves of the late war, the Confederate soldiers on one side, the Federals on the other.

Here there will be two Decoration Days, until coming generations will lay wreaths upon all graves alike.

LEXINGTON.

The early pioneers were laying out this town when they heard of the news of the battle of Lexington of Revolutionary fame, so they named the town Lexington.

This town is a handsome city, surrounded by a fertile country of great beauty. It is 20 miles distant from Frankfort and is in the center of the famous Blue Grass Country. Lexington is especially famous for its celebrated race horses and "Bourbon" whisky. Near by is Ashland, the country home of Henry Clay. The cemetery contains a \$50,000 monument in memory of the Great Pacificator. The manufacturing interests are important, the city has a number of noted schools and several state institutions. It was once the capital of Kentucky.

KENTUCKY RIVER.

This river rises in the Cumberland Mountains and flows northwest about 250 miles into the Ohio. The river seems to have worn itself through limestone rocks, which rise in perpendicular cliffs on either side. The scenery is picturesque. The Kentucky has no important branches.

By means of locks and dams, steamboats can navigate one-third its length.

Excellent coal, iron and marble are found along its banks.

SINK HOLES.

The "Sink Holes" of this state are cavities in the surface of the ground, commonly in the shape of inverted cones, sixty or seventy feet in depth and from sixty to two hundred feet in circumference at the top.

The ear can often detect the sound of water flowing beneath.

MICHIGAN.

"The Lake State." "Wolverines." Mich 1837.	Location.	
	Comparative size.	
	Bays.	{ Green. Saginaw.
	Strait of Mackinaw.	
	Lakes.	{ Superior. Michigan. Huron. St. Clair. Erie.
	Rivers.	{ Grand. Detroit. St. Clair. Sault St. Marie.
	Islands.	{ Mackinac. Beaver.
	Cities.	{ Detroit. Lansing. Grand Rapids. Bay City. Saginaw.
	Products.	{ Animals. Vegetables. Minerals. Manufactures.

SUGGESTIVE KEY WORDS.

310. Ann Arbor.
 311. Pictured Rocks.
 312. Gem of the Straits.

- 313. Sand dunes.
- 314. "Peninsula State."
- 315. Gibraltar of the Lakes.
- 316. "The Pocahontas of the West.
- 317. The Fruit Belt.
- 318. The Sail Rock.
- 319. The Grand Portal.
- 320. Educational System.
- 321. Peat deposits.

QUERIES.

- 356. What portion of the Lakes does the United States own?
- 357. Which city contains the largest medical and surgical sanitarium in the world?
- 358. What Indians still live in Michigan?
- 359. Which peninsula excels in agriculture? In minerals?
- 360. What does the motto of Michigan mean?
- 361. What canals in Michigan?
- 362. Where are the salt wells located?
- 363. For what vegetable production is Kalamazoo noted?
- 364. Where is the most noted summer resort in Michigan?
- 365. For what is Ypsilanti noted?
- 366. Name the forest products of Michigan.
- 367. Where is Michigan City?
- 368. How do vessels pass to and from Lake Superior.

ITEMS OF INTEREST.

Michigan excels all other States in producing lumber and salt.

An excellent and sure crop of apples and peaches is produced yearly in Michigan. On account of the modifying influence of the lakes, the climate is more mild and equable than in the neighboring States.

The first European settlement was made by Father Marquette, at Sault St. Marie, in 1668.

In 1858, James D. Graham of Chicago, proved the existence of a lunar tidal wave on the lakes.

The spring tides gave a difference of three inches.

Near Thunder Bay, stone is quarried which makes excellent grindstones.

Michigan is second in extent of coast line.

Which State has the most?

DETROIT.

Detroit, the metropolis of Michigan, and the best harbor on the great lakes, is situated on the right bank of the Detroit River.

This city has a river frontage of over seven miles, the entire distance of which is crowded with warehouses, elevators, ship-yards, dry-docks mills, foundries, factories, and other business buildings.

A boulevard in the form of a crescent, nine miles long and 150 feet wide, surrounds the city.

Fort Wayne, just below the city, commands the strait and defends the city. The principal park is called the "Grand Circus," from which the avenues radiate.

In 1886, twelve lines of railroads centered here, and steamboat lines run to most of the lake ports. Detroit is one of the important lumber markets, and "the largest center in the world for stoves, railroad cars, emery wheels and pharmaceutical supplies."

There are many fine buildings here. The French first visited this region in 1670.

In 1701, Cadillac founded Detroit. The *Griffin*, under LaSalle, sailed to the entrance of the Detroit River. Here stood an Indian village of unknown date, where now stands the City of the Strait. This region is rich in Indian legends and lore. Detroit brings to our remembrance Pontiac, Hull, River Raisin, and other historic persons and scenes. It has been the scene of "one surrender, fifty pitched battles, and twelve massacres."

SALT MANUFACTURE.

Michigan leads all other States in the manufacture of salt, and a few words of how it is made will not be out of place.

There are several ways by which the salt may be separated from the water, which holds it in solution.

Evaporation is performed by the heat of the sun in the warm countries, and hot seasons in the temperate regions. Evaporation is by artificial heat, commonly known as boiling.

Evaporation, by condensation, by which the ice formed is nearly pure water, and the brine remaining is finished by boiling.

Northern Europe uses the last method, and the United States the first and second.

The brine is pumped into shallow vats, when the design is to remove impurities, such as iron, carbonic acid, sulphate of lime, and several chlorides.

The vats are protected by large movable covers. The evaporation is performed very slowly, hence the crystals are larger, or "coarse salt" is formed.

Fine table salt is obtained by boiling in kettles and pans, or by the steam process.

The kettles and pans are placed in long rows, under which fire is introduced, hence the evaporation is very rapid, and the salt requires removing continually.

The steam process consists of steam pipes running through large wooden vats or cisterns, otherwise the process is the same. The finest salt in the United States is obtained from Michigan, Onondaga, N. Y., and Ohio and Kanawha Salt Companies. 25 to 30 gallons of water produces one bushel of salt at Saginaw, Michigan.

This is the strongest brine known in United States. Fuel being near and cheap, it is readily seen why Michigan stands at the head of the salt manufacture.

BENTON HARBOR.

Benton Harbor is the chief shipping station of domestic fruits in Michigan. One steamer once carried off 16,000

crates of berries for a load. Canning factories, cider, vinegar and pickle factories are located here.

Some of the best wood-working machinery is produced in works which have been moved from Grand Rapids.

ST. CLAIR TUNNEL.

The immense amount of railroad business over the Grand Trunk and other connecting lines, made it necessary to provide other means of transportation besides the steam ferries. Over 500 cars were ferried daily. At length it was determined to construct a tunnel from Port Huron on the American side, to Sarnia in Canada. The company was formed in 1886, and the tunnel was completed September, 1891.

The tunnel is 6,800 feet long, and circular in form, having a diameter of 20 feet. The bed of the tunnel is 15 feet below the bed of the river, or 66 feet below water level. It cost \$2,500,000.

COPPER.

The southern shores of Lake Superior abound in native copper, the purest and most abundant in the United States.

The rock is first crushed, then washed, when it is nearly in a pure state. It needs only to be smelted to make ingot copper.

Michigan has more copper mines than all the rest of the states of United States.

Some of the mines had been worked long ago by people who had stone implements with which to work.

MARQUETTE.

Marquette is an important shipping point on the northern peninsula. The leading industry is handling iron ore. This place is a noted summer resort, and celebrated for its fine fishing.

Presque Isle is one of the finest natural parks in the West. Congress presented the island to the city of Marquette.

Electric light is furnished by the water power from Dead River, several miles distant.

WISCONSIN.

"Badger State." "Badgers."	{	Location.	
		Comparative size.	
	{	Green Bay.	
		Lakes.	{ Superior. Michigan. Winnebago. Pepin.
	{	Rivers.	{ Mississippi. St. Croix. Wisconsin. Rock. Fox. Menominee.
		Cities.	{ Milwaukee. Madison. Oshkosh. Racine. LaCrosse.
Wis. 1848.	{	Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

- 322. Cream Colored City.
- 323. The Dalles.
- 324. Height of Land.
- 325. Mound Builders.
- 326. Lead Region.
- 327. The State Park.
- 328. Winnebago Marsh.
- 329. Hop Culture.
- 330. Lumber Camps.
- 331. Eye of the Northwest.
- 332. The Lake City.
- 333. Maiden Rock.

QUERIES.

369. Which city manufactures the most threshing machines?

370. What does "Wisconsin" mean?

371. What Indian war partly occurred in this State?

372. What names in Wisconsin suggest a French origin?

373. Which is the deepest of the Great Lakes?

374. Name ten ports on the Great Lakes, and tell something noted of each.

375. How can you account for so many small lakes in these Northern States?

376. What noted group of islands in Lake Superior?

377. In what vegetable production does Wisconsin excel?

378. What town of Wisconsin manufactures a great many ships?

ITEMS OF INTEREST.

MILWAUKEE.

Milwaukee, the metropolis and chief port of entry of Wisconsin, is on the western shore of Lake Michigan, about 85 miles north of Chicago. The harbor, naturally one of the best on the lake, has been improved by the Government building a breakwater, costing \$1,000,000.

The copper and iron mines, not far distant, have done much toward making Milwaukee a great manufacturing city. The city is celebrated for the great quantities of lager beer, which finds a market all over the Union. \$4,000,000 are invested in that branch of industry alone. The lumber and grain interests are extensive. Vast iron mills and large leather factories are here located.

Near here is located the National Northwestern Soldiers' Asylum for disabled veterans. These buildings are surrounded by 425 acres of land, one-half of which is under cultivation, the remainder forms a beautiful park.

One of the State Normal schools is here. There are many fine buildings in Milwaukee, among which are the Postoffice and Custom House, County Court House, Board of Trade Building, Masonic Temple, railroad depots, churches, schools, etc.

ASHLAND.

Ashland is noted particularly for its lumber interests, and as a shipping port for iron ore.

Here is found the largest charcoal blast furnace known; the output is 100 tons daily. In 1890, the saw mills cut 138,000,000 feet of lumber, besides laths and shingles.

This city has many attractions for summer tourists.

The Apostle Islands are favorite resorts for excursionists.

On one of these islands John Jacob Astor established a fur trading post, and the dock still stands.

The Pierre Marquette Mission, of 1669, is still in a good state of preservation.

SUPERIOR.

Superior, one of the cities whose recent growth is phenomenal, is very advantageously located, near the west end of Lake Superior. The city has three deep and safe harbors, and is the center of seven great systems of railroads.

Manufacturing and commerce combine to make Superior prosperous.

It grew from a hamlet of a hundred inhabitants in 1885, to a bustling city of over 20,000, in 1890.

MADISON.

Madison, capital of Wisconsin, and one of the most beautifully located cities in America, is built upon an isthmus, about three miles in length and one mile wide, lying between Lakes Mendota and Monona.

Besides being the capital, it is noted for its commerce and its educational advantages.

Among the important institutions are the University of Wisconsin, Soldiers' Orphans' Home, and Asylum for the insane.

CHIPPEWA FALLS.

Chippewa Falls, beautifully situated on both sides of the Chippewa River, takes its name from the falls in the river. The falls are about 25 feet in height, and furnish power that is used in manufacturing.

The principal industry is the manufacture of lumber, shingles, lath, etc.

One of the largest saw mills in the world is located at this place.

The water with which the city is supplied comes from a spring that issues from a rock. The water is very nearly pure; it contains less than one per cent. of impurities.

EAU CLAIRE.

Eau Claire, situated at the confluence of the Eau Claire and Chippewa rivers, is one of the greatest lumber manufacturing cities of the United States.

Besides lumber, furniture, paper, ice and electrical appliances are made here. It has a healthful location.

RACINE.

Racine is located on the west shore of Lake Michigan, has an excellent harbor and good railroad facilities.

Manufacturing is the leading industry. Farming implements of various kinds, and engines, are the principal articles of export.

It is the seat of the University of the Northwest.

PRAIRIE DU CHIEN.

Prairie du Chien, one of the oldest towns of Wisconsin, is on the left bank of the Mississippi River, a short distance above the mouth of the Wisconsin River.

It is built upon the former site of Fort Crawford. It was at this fort that Jefferson Davis won the heart of Noxie Taylor, the daughter of Zachary Taylor. The story is that "Old Rough and Ready" opposed the match, and that, as the daughter had inherited some of the independent spirit of her father, an elopement preceded the marriage.

MINNESOTA.

"Gopher State." "Gophers."	{	Location.	
		Comparative size.	
	{	Lakes.	{ Superior. Rainy. Woods. Itasca.
		Rivers.	{ Mississippi. St. Croix. Minnesota. Des Moines. Red River of the North.
Minn. 1858.	{	Height of Land.	
		Cities.	{ St. Paul. Minneapolis. Duluth. Red Wing. Winona.
	{	Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

334. The Diadem City.
335. St. Anthony's Falls.
336. Minnehaha Falls.
337. The Zenith City.
338. The Twin Cities of the West.

- 339. The Big Woods.
- 340. Fountain Cave.
- 341. The Ice Palace.
- 342. Indian Reservations.
- 343. Itasca State Park.
- 344. The Gateway of the East.

QUERIES.

- 379. Who first explored the upper Mississippi River?
- 380. What is the meaning of the word *Minnesota*? *Minnehaha*? *Minneapolis*?
- 381. What is the origin of the word *Itasca*?
- 382. What is the latitude of the most northern portion of Minnesota?
- 383. What is the *straightest* river, of its size, in the United States?
- 384. The scene of what famous poem is located principally in Minnesota?
- 385. What lake is now considered the source of the Mississippi River?
- 386. What State once offered \$200 a piece, for Indian scalps? When?
- 387. What lines of steamboat navigation begin in Minnesota?
- 388. What kind of engines are used in street car service of Minneapolis?
- 389. Does the destruction of the forests affect the climate?

ITEMS OF INTEREST.

SAINT PAUL.

Saint Paul, the capital of Minnesota, has a beautiful location upon several terraces, on the left bank of the Mississippi River, 2,200 miles above its mouth. It is devoted to both manufacturing and commerce, and has grown very rapidly within the past few years.

It is at the head of steamboat navigation, for large boats.

Its water supply comes from Lake Phalen, three miles distant.

LAKE MINNETONKA.

Lake Minnetonka is a popular summer resort, about 12 miles southwest of Minneapolis.

Numerous cottages and several immense hotels line the shores, for the accommodation of seekers for health and recreation. The lake is about 15 miles long, has many beautiful bays, and is well furnished with all kinds of pleasure boats.

MINNEAPOLIS.

Minneapolis, the largest city of Minnesota, lies fourteen miles, by the river, or eight miles in a direct line, west of St. Paul.

It has had a phenomenally rapid growth during its recent history.

The Falls of St. Anthony at this place furnish an immense amount of water power. This is utilized by many mills and factories. It manufactures more flour than any other city in the United States.

The "A" mill, of Pillsbury's, is the largest in the world, and has a daily capacity of 7,000 barrels.

Another great industry of Minneapolis is the manufacture of lumber and the various products of the planing mills.

Over half the lumber product of Minnesota is turned out by the saw mills of Minneapolis. For this reason it is sometimes called the "Sawdust City."

WINONA.

Winona, one of the greatest lumber manufacturing cities of the United States, is pleasantly located on the right bank of the Mississippi River.

The other important manufactures are flour, vehicles and farming implements.

A large and prosperous State Normal school is located in Winona.

MANKATO.

This town, the largest city of southern central Minnesota, has a picturesque location at the big bend of the Minnesota River. It is in the center of a very rich country, and is engaged largely in manufacturing and commerce.

It is the seat of one of the State Normal schools.

It was at this place that thirty-eight of the savages engaged in the Sioux War of 1863 were executed at one time.

TOWER.

Tower, devoted at present wholly to mining iron ore, is located on the south shore of Vermilion Lake. This lake gets its name from its appearance at sunset. The hills surrounding the lake contain almost inexhaustible mines of the purest magnetic iron ore yet found anywhere. The vein varies in thickness from 25 to 125 feet.

The ore is shipped to Chicago, Pittsburg, and other eastern cities to be used in manufacturing iron ware of various kinds.

TWO HARBORS.

This town, important as one of the principal shipping points for the immense quantities of iron ore and timber produced in this section of the State, is located on Lake Superior, about twenty-seven miles north of Duluth. It has also some note as a summer resort.

DULUTH.

Duluth, the third city in size in Minnesota, is advantageously located for commerce at the head of Lake Superior. It is near vast supplies of timber and mineral wealth, and forms the natural outlet for the vast grain fields of the northwest.

It has a good harbor, that is capable of accommodating the largest vessels. Its growth within the past few years has been remarkable.

THE MINOR LAKES.

The minor lakes region of the United States lies principally in the states of Minnesota and Wisconsin. It is estimated that fully one-sixth of the lake surface of the United States is found here, and good authorities estimate the number at about 12,000.

Within 25 miles of Minneapolis there are 200 lakes, and within the great pine forests are countless numbers yet unexplored. In Minneapolis this region bears the name of "Park Region." The whole area is a gigantic reservoir system, preventing floods and supplying water in the drier periods for the navigation of the Upper Mississippi.

These water courses help to convey the logs from the lumber camps to the saw mills, miles away. The hunting, the fishing and the scenery is all that could be desired. The lakes temper the cold of winter and modify the heat of summer.

THE PIPESTONE QUARRY.

Catlin was the first white man to explore the place which the poet describes, thus :

On the Mountains of the Prairie,
On the great Red Pipestone Quarry,
Gitche Manito, the Mighty,
He, the Master of Life, descending
On the red crags of the Quarry,
Stood erect, and called the Nations,
Called the tribes of men together.

The Quarry is something over one mile from the town of Pipestone, Minneapolis. This locality is of interest to the geologist on account of a rock formation which is found nowhere else ; to the historian for its romance and legends ; to the red men as a spiritual shrine to which they make yearly pilgrimages. The stone when first taken from the quarry is very soft and easily carved into curious shapes. It afterwards hardens rapidly.

There are evidences that the Mound Builders knew of and visited this region. The open quarry is an excavation of perhaps sixty feet across and fifteen or eighteen feet deep. Fragments of the pipestone lie strewn about on every side. The Indians select the choicest pieces of stone for working, discarding all that have hardened and all that are of an undesirable color. It is their inherited belief that the stone is composed of the blood of Indians ; and when a streak of a lighter color appears they cast the stone aside, believing it to be a white man's blood, which no good Indian is allowed to use. Having selected his several pieces of pipestone, the dusky artist seats himself cross-legged on the ground before his tent, and proceeds to carve them into the desired articles. The one thing which he most delights to make is a calumet, shaped to represent a tomahawk. It is graceful in design, nicely carved and artistically ornamented. There are many forms of pipes and other articles, novelties—any thing in fact that would make a suitable memento of the place ; for the Indians are shrewd on this point and carry on a thriving trade with tourists and curiosity-seekers.

SOUTH DAKOTA.

S. Dak. 1889.	"Land of the White Rabbit." "Coyotes."	Boundary.	
		Area.	
		Population	{ White. Red.
		Lakes.	{ Stone. Traverse.
		Rivers.	{ Missouri. Big Sioux. Dakota. Cheyenne.
		Mountains.	{ Black Hills. Plateau of the Missouri.
		Cities.	{ Sioux Falls. Pierre. Yankton. Deadwood.
		Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

- 345. The Big Muddy. .
- 346. The Big Bend.
- 347. Hot Springs.
- 348. Buffalo Wallows.
- 349. Newport of the West.

- 350. The Bad Lands.
- 351. The Mother City of Dakota.
- 352. The Great Sioux Reservation.
- 353. The Pirates of the Missouri.
- 354. Prairie Fires.
- 355. Chinook Winds.
- 356. Hot Winds.
- 357. The Gate City of the Hills.

QUERIES.

- 390. Can you pronounce Missouri ? Coyote ?
- 391. Which city is nearly one mile above the sea level ?
- 392. What is an artesian well ?
- 393. How is it proposed to irrigate South Dakota ?
- 394. Where are the richest tin mines in America ?
- 395. How have railroads helped in settlement ?
- 396. Mention some of the hardships the early settlers had to endure.
- 397. Where are the trade centers through which Dakota's imports and exports pass ?
- 398. What was the Timber Culture Act ? Why was it repealed ?
- 399. What river furnishes the best water power in this State ?
- 400. Why are the prairies treeless ?
- 401. Why does the snow melt under a northwest wind ?

ITEMS OF INTEREST.

SIOUX FALLS.

Sioux Falls, the metropolis of South Dakota, is situated on the Big Sioux River. The quarries here furnish the most important business, next to mining. The granite is of various colors, and is capable of a high polish. Many public buildings are built from the material obtained here. Sioux Falls is the seat of the State penitentiary, the School for Deaf Mutes, and of four sectarian colleges. The river descends 90 feet in the distance of one-half mile, thus affording abundant water power. The Dells and Palisades along the Sioux River are beautiful to behold. Sioux Falls has a variety of industries of minor importance.

The polishing works here use car load after car load of the petrified wood of Arizona for making monuments and ornaments of different kinds.

BLACK HILLS.

These hills are located in the southwest corner of South Dakota and extend into Wyoming. They occupy an area of sixty by ninety miles.

Harney's Peak is the highest point. Crook's Tower is nearly as high.

The hills are surrounded by a wall of sand-stone, inside of which is the "Race Course" of the Indians. Near the south side are the famous Hot Springs, called by the Indians

Minne-kah-ta. Not far distant is a cave which will claim equal laurels with the most noted in our land.

Lead City contains the largest stamp mills in the world.

Rapid City is the seat of the Dakota School of Mines.

Deadwood is in the center of the mining district, and is so called on account of the dead trees which were destroyed by fires.

Deadwood is built on the side of a gulch, or rather several gulches, and the business that supports the town is performed outside, in the mining camps. Spearfish, in the Black Hills, is the seat of a Normal School.

The minerals of this region are tin, gold, silver, lead, copper, mica, gypsum, coal and stone. The Indians believed the Hills to be the abode of the Great Spirit, and that the springs possessed great curative properties.

Half a century ago, the Sioux and Cheyenne Indians fought for the possession of this region at a place called Battle Mountain.

The Sioux were victorious.

CAVE OF THE WINDS.

This cave is twelve miles north of the Hot Springs. It was found by a cowboy in 1884, but not explored until 1890. The temperature in the cave stands at 45° Fahr. The entrance was blasted and the cave has been explored for several miles.

A thousand chambers have been discovered, the largest of which is about three acres in extent. The stalactite form-

ations are beautiful, and the owners are careful to preserve the grandeur of the cave.

TIN MINES.

For several years past a company of men have silently bought all the available tin mines in the vicinity of Harney's Peak. Their capital consists of \$15,000,000. One of the officers reports as follows :

"The company, of which I am chairman, and in which American capitalists are equally interested, have built two of the largest and most thoroughly equipped mills in the world.

"They have a capacity of producing 500 tons of tin daily. In two years hence this country need not import any more tin, and the production will save \$75,000,000 annually.

"The mills expect to begin work by October 1, 1892."

Hill City is the center of the tin mines.

THE WOONSOCKET WELL.

At Woonsocket there is an artesian well 725 feet deep, which discharges 8,000 gallons of water per minute. There is a pressure of 153 lbs. to the square inch, and it throws a four-inch stream 70 feet high, or a two-inch stream 200 feet high. It is used for domestic purposes, and also supplies the fire department with water.

It is said that this well exceeds in power and volume any other well in the world.

A DAKOTA BLIZZARD.

A genuine blizzard is a storm of fine sleet accompanied by a fierce gale and freezing temperature. It usually follows a warm day, and the change comes very quickly. The frost begins to fly, the mercury falls below zero, the snow on the ground begins to move with a swishing sound, until all the snow seems to be in the air.

The stinging, blinding sleet and the deadly cold wave combine to make it nearly impossible to find the best known paths.

All this may seem incredible to those who never were in such a storm. It is impossible to convey its grim horrors in words; it is impossible to realize that men could get lost in going fifty feet, with houses all round, but they were.

A blizzard is something terrible; it is something, which if once experienced, is never forgotten. No man wants to see one twice.

The following is an account of the author's experience in the great blizzard of January 12, 1888, in South Dakota

January 11, it snowed two or three inches of light, fluffy snow. The morning of the 12th there was a light wind from the south, with a dull, hazy, obscure atmosphere. A double ring was plainly visible around the sun. We saw the storm working up against the wind, and all the children reached school before it broke upon us. The wind suddenly shifted to the northwest, and in an instant we were in the midst of a fierce blinding storm of snow and sleet. The

wind blew the snow in under the door, up from the floor, in the windows and even down from above, and it was only by careful attention that the room was kept barely comfortable.

Noon came—no abatement.

The coal house was just back of the school-house and open enough to drift full of snow.

The noontime was spent in shoveling out the coal for the afternoon. Recess—the gale increased, if anything.

Night came—the storm furies still held sway, and we came to the conclusion to stay in the school-house all night.

Enough coal to last all night was brought in and piled in the corner of the room.

The teacher went to the neighbor's, about 150 yards off, to see what arrangements could be made for food and other accommodations. The neighbor offered to keep the girls all night if they could get there and with numerous wraps the teacher started back to the school-house.

The teacher traveled by guess for seeing was out of the question, and the wind was no guide—shifting and deceitful as the Will-o'-the-wisp.

The school-house was reached again without mishap, the girls warmed and carefully wrapped, then, hand in hand, we started for the house. The teacher led the way, the others following as before stated. Half way over, the teacher turned to see if all were coming, found the line broken and the children scattered, and thus the bearings were lost. All were huddled together, and a shawl was thrown around them, with the request not to move until sure of the right direc-

tion. The wind would whirl in every direction, and at times the snow and sleet would cover our faces so we could not see a particle—couldn't even see our feet—and it was almost suffocating. In a few moments a pile of rocks was found, which were due east from the house about 130 feet, and the pupils moved to them. We all knew where we were, but no one knew which way was west. Horror of horrors!

Placing one pupil about 20 feet from the others, the teacher went as much farther. This was done several times in different directions, when cuttings were discovered which were in rows leading to the house.

On hands and knees the teacher followed the row to the house, the rest, ten pupils, following.

The children were crying with the cold, nearly all were frosted; faces, fingers and feet were blistered. The teacher undid wraps, placed frozen limbs in water, and cared for the comfort of all before he realized his own frost bites.

The lady of the house spread bread and butter for the boys and we started back.

In the meantime the sun had gone down. The boy who was helping to take the food to the school-house desired not to go, and rather than risk chances of a night on the prairie, with the snow for a winding sheet, we turned back. No one cared for supper. All went to bed to keep warm; 14 persons in a 14 by 20-foot house of one story.

Sleep was out of the question.

About mid-night the wind lulled for a few moments, and the teacher went to the school-house, where all were found

safe around the fire. With a red hot stove, and a thermometer only ten feet away on the north side of the house, the mercury stood about zero. It was 30° below, out doors, next morning, and a stiff wind blowing.

The author was a truly happy, thankful boy, thinking "what was," and "what might have been."

NORTH DAKOTA.

N. Dak. 1889.	"Home of the Blizzards."	{	Location.		
			Comparative size.		
			Devil's Lake.		
			Rivers.	{	Missouri.
					Little Missouri.
					Dakota.
					Red River of the North.
			Turtle Mountain.		
			Plateau of the Missouri.		
			Cities.	{	Fargo.
					Bismarck.
					Grand Forks.
Jamestown.					
Products.	{	Animal.			
		Vegetable.			
		Mineral.			

SUGGESTIVE KEY WORDS,

358. The Burning Mine,

359. Lumber Region.

- 360. The Fur Traders.
- 361. No. 1 Hard.
- 362. Mennonites.
- 363. Glacial Drift.
- 364. Pre-emption Claim.
- 365. Homestead Claim.

QUERIES.

- 402. What does the word "Dakota," mean?
- 403. Is Devil's Lake fresh or salt water?
- 404. How is the Northern boundary marked?
- 405. Why is the Red River Valley such a good wheat country?
- 406. What is the division line between the Dakotas?
- 407. Why was the Red River so named?
- 408. How are many cities of Dakota supplied with water?
- 409. How are the Indians provided for?
- 410. Describe an Indian agency, issuing rations, butchering day, etc.
- 411. What is the Severalty Bill?
- 412. What is the Indian Peace Policy?
- 413. Where, on the boundary line, is there a custom house?
- 414. Are days longer in this State than where you live? If so, why? If not, why not?

ITEMS OF INTEREST.

FARGO.

Fargo, the metropolis of North Dakota, is one of the most enterprising and prosperous cities of the golden Northwest.

Its schools, churches, public buildings and industries, are first-class.

It is a distributing point for all this region, and the grain and lumber trade is immense.

Near here are the famous large Dakota farms, one of which contains 75,000 acres.

JAMESTOWN.

Jamestown is a thriving town on the James or Dakota River. It is the seat of the Asylum for the Insane, and a Presbyterian College.

It has large hotels, many fine residences, and is the leading town in that section of the State.

GRAND FORKS.

Grand Forks is a lively business city, north of Fargo, on the Red River of the North.

It has an extensive lumber trade. The grain trade of the surrounding country is enormous. It is the seat of the University of North Dakota, which affords education free to all who attend.

WALLED LAKE BEDS.

In North Dakota, and other neighboring States, are the curious freaks of nature known as the walled lakes.

The banks are lined with stone in irregular order, and are higher than the surrounding land.

The lakes are shallow and freeze solid in the winter time, and the supposition is that the expansive force of the ice slowly forces the stones to the shore, and builds up the banks.

DEVIL'S LAKE.

Minnewaukon (Spirit Lake), or Devil's Lake, is about 5 miles in length and about 2 miles wide. It is the largest lake in the State, and has 100 square miles of surface. It has no outlet, and has narrow belts of timber surrounding it. Its altitude is 1,200 feet above the sea level.

It is the breeding place for geese, ducks, brants, swans, etc. Near this lake is an Indian reservation, a United States military post, and mission schools.

BAD LANDS.

In the valley of the Little Missouri is a tract of broken country, 30 by 150 miles long, called the Bad Lands. These lands are noted for their wonderful scenery and remarkable fossil remains.

Towers, castles, obelisks and pyramids, colored by the rising and setting sun, present a scene truly grand and novel. The rugged buttes, bluffs and brush thickets furnish shelter





for wild game and herds of cattle. Grasses and herbs grow in the nooks and ravines, and furnish food in both winter and summer.

Many are the wonderful stories told by travelers concerning these localities.

A DAKOTA FARM.

Near Castleton, in the Red River Valley, is the famous farm of Mr. Oliver Dalrymple, who owns 75,000 acres of land.

The land is divided into smaller farms of 2,000 acres, each under the charge of a foreman. Supplies are purchased at wholesale, and machinery by the carload. Each farm has the necessary buildings belonging to any well regulated farm.

The outfit consists of hundreds of gang-plows, a hundred seeders, a hundred self-binders, and twenty steam threshers. Harvest begins about August 1st, and the immense wheat fields are a wonder to behold.

Imagine a procession of self-binders coming down a field of wheat extending as far as the eye can reach, and cutting a strip nearly a quarter of a mile wide.

Along side of this army see the mounted blacksmith with his movable shop and tools to repair any breaks. Here and there, over the field, we see the threshing machines, manned by a force of six hundred men. This is farming on a large scale, and no wonder this region is famous for its No. 1 hard spring wheat, which makes the best flour in the world.

IOWA.

Ia. 1846.	"The Hawkeye State." "Hawkeyes."	Location.	
		Comparative size.	
		Rivers.	{ Mississippi. Cedar. Iowa. Des Moines. Missouri. Big Sioux. Little Sioux.
		Cities.	{ Burlington. Des Moines. Davenport. Dubuque. Council Bluffs. Sioux City.
		Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

366. The Walled Lake.
 367. The Gate City.
 368. Missouri Flats.
 369. Corn Palace.

- 370. Coal Palace.
- 371. Coal Fields.
- 372. The Orchard City.
- 373. The Lowell of Iowa.
- 374. Gypsum Quarries.
- 375. The Key City.
- 376. Belle Plaine Geyser.

QUERIES.

- 414. Which is the only State having an eastern and western river boundary?
- 415. Which is the oldest town in the State?
- 416. Locate the lead region of Iowa.
- 417. Give the origin of the name of the State. Motto?
- 418. Where in the State are relics of the Mound Builders found?
- 419. Where is the lake region? Name several of these lakes. For what are they principally noted?
- 420. What disaster happened to Sioux City in 1892?
- 421. Does Iowa contain breweries and distilleries?
- 422. Where is the Blue Grass Palace located?
- 423. Where are the upper rapids on the Mississippi River?
- 424. Locate the highest point of land in the State.
- 425. In what products does Iowa excel?
- 426. Which city is the center of the lead trade?

ITEMS OF INTEREST.

DAVENPORT.

This city was named after Colonel Davenport. It is opposite Rock Island, and Moline, in Illinois.

Its railroad advantages and water communication with the North and Northwest, make it an important commercial center. The product of the factories amounts to over \$15,000,000 annually. The saw mills do a large business, and the grain handled is enormous. There are many noted schools here. The Government has expended many millions for improvements on an island in the river.

BURLINGTON.

Burlington is very pleasantly situated on the "Father of Waters." The city is particularly noted for its fine drainage, pure air and healthfulness. Its nearness to stone quarries, its vast timber wealth, and the location between the coal fields of two States, all combine to make Burlington one of the important cities of Iowa. The lumber, iron, grain and railroad interests, are extensive. The buildings are mostly of brick.

SIOUX CITY.

Sioux City is one of the most thriving and enterprising cities in Iowa.

It is an extensive wholesale supply center for South Dakota, Nebraska and western Iowa. It ranks third in United States as a pork packing center.

Fully one-half of the flax seed produced in our country is raised within 200 miles of Sioux City. Oatmeal and flour mills, foundries and machine shops, many factories of various kinds, and other industries, are found here. The Corn Palace Exposition is one of the modern attractions which draws large crowds annually. The area of the city is thirty square miles (1889).

STORM LAKE.

There is a small lake in northwestern Iowa called Storm Lake, which is a pleasant summer resort. The area of the lake is in the neighborhood of 25 square miles. When the lake overflows it is a strange fact that the waters flow into branches that respectively reach the Missouri and Mississippi Rivers. The lake has a gravelly beach, and the citizens have planted many beautiful shade trees around the lake.

The town of Storm Lake has a glove and mitten factory.

AN ICE CAVE.

Hidden deeply among the hills of northeastern Iowa, there exists one of the wonderful works of nature.

On the Iowa River, near Decorah, in a cliff 200 feet high, is a natural ice cave.

The cavern is about 10 feet wide by 40 in length, and all around is found one mass of pure ice.

The ice on the walls is only a few inches thick, but transparent. It was named from Old Decorah, an Indian chief, who used the cave for preserving dressed game.

LOWER RAPIDS OF THE MISSISSIPPI.

Near Keokuk is a canal which the United States Government has opened for navigation, at a cost of \$9,000,000.

This canal is nearly eight miles in length, three hundred feet wide, and seven feet deep at the lowest water. There are three locks in this canal.

There is also a dry dock connected with it, which is owned by the Government.

Boats winter in this canal, and much ice is taken from it yearly.

LOST ROCKS.

In Cherokee County there is a large rock 40 by 60 feet in size, 20 feet above ground and more below the surface. They are called boulders, or lost rocks. The supposition is they were brought here by glaciers.

Read up the subject in geology.

COUNCIL BLUFFS.

Council Bluffs received its name from the fact that the Indians made treaties in this place.

It was long a trading post, later it became the stopping place of the Mormons who left Nauvoo, Illinois.

The city is now metropolitan in every respect, and is the terminus of eastern and western trunk lines.

Hence, this city, with Omaha, just across the river, has an immense wholesale and jobbing trade.

The largest trade is in agricultural implements. The machine shops, the canneries, the wagon and carriage factories, give employment to thousands of people. The public parks, the schools and cemeteries, are objects of note. Below the town the river forms a lagoon, around which a beautiful park is appropriately fitted for a summer resort. Large hotels, pleasure boats, etc., attract many visitors.

NEBRASKA.

<div> <div>“Black Water State.”</div> <div>“Bug-Eaters.”</div> <div>Neb.</div> <div>1867.</div> </div>	{	Boundary.	
		Comparative size.	
		Rivers.	<div> <div>{ Missouri.</div> <div>{ Platte.</div> <div>{ Republican.</div> </div>
		Cities.	<div> <div>{ Lincoln.</div> <div>{ Omaha.</div> <div>{ Beatrice.</div> <div>{ Grand Island.</div> <div>{ Nebraska City.</div> </div>
		Products.	<div> <div>{ Animal.</div> <div>{ Vegetable.</div> <div>{ Mineral.</div> </div>

SUGGESTIVE KEY WORDS.

377. Bad Lands.

378. Sand Hills.

379. Sod Houses.

- 380. Draws.
- 381. Locusts.
- 382. Kansas and Nebraska Bill.
- 383. Bull-bats.
- 384. Salt Springs.
- 385. Great American Desert.

QUERIES.

- 427. Why are the rivers of this State not navigable?
- 428. What fuel supply has Nebraska beside wood and coal?
- 429. What is the meaning of the word *Nebraska*? Why appropriate?
- 430. What minerals are found in Nebraska?
- 431. What portion of Nebraska is well adapted to agriculture? For grazing?
- 432. What town is noted for the manufacture of beet sugar?

ITEMS OF INTEREST.

OMAHA.

Omaha, the metropolis and former capital of Nebraska, is built upon the west bank of the Missouri River, opposite Council Bluffs. It is the eastern terminus of the Union Pacific Railroad, and also the terminus of several other railroads. The growth of the city since the completion of the Union Pacific Railroad, has been constant and rapid.

Omaha is connected both by bridge and ferry with Council Bluffs, Iowa.

Omaha is a distributing point for a great territory west of it, and also has some note for its manufactories and pork packing establishments.

LINCOLN.

Lincoln, at the time it became the capital of the State, was located at center of population of the State. It is now the most important railroad center. It is engaged in manufacturing and commerce, and is noted for its public and educational institutions. Of these may be mentioned the Asylum for the Insane, Penitentiary, State University, Industrial University, and the Wesleyan University. The usual modern conveniences of a great city are found here.

It is one of the handsomest cities of the West.

BEATRICE.

Beatrice is a thriving town, and the center of more than a half-dozen railroads. It is located on the Big Blue River, surrounded by a rich farming country.

It is the seat of a State Institute for feeble minded persons.

HASTINGS.

Hastings, 180 miles west of Omaha, is a prosperous town with excellent railroad facilities, is situated in the midst of a fertile and well settled region. It is the seat of Hastings College.

NEBRASKA CITY.

Nebraska City is an important town on the Missouri River, nearly due west of the southern border of Iowa. Manufacturing is the leading industry.

Nebraska College is located here. The Missouri is here crossed by a steel railroad bridge, and a pontoon bridge for vehicles.

CRETE.

Crete is another city whose recent growth has been very rapid. It is very pleasantly located on the Big Blue. The Nebraska "Chautauqua Assembly" meets here every summer.

KANSAS.

"Garden of the West." "Jay-hawkers." Kan. 1861.	{	Location.	
		Comparative size.	
		Rivers.	{ Missouri. Kansas. Republican. Smoky Hill. Osage. Arkansas.
		Cities.	{ Leavenworth. Topeka. Atchison. Lawrence. Wichita. Ft. Scott.
	{	Products.	{ Animal. Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

- 386. The Central State.
- 387. Ossawatomie Brown.
- 388. Border Struggle.
- 389. Guerrillas.
- 390. Squatter Sovereignty.

QUERIES.

- 433. What does the word *Kansas* mean?
- 434. What trouble occurred in regard to the admission of this State?
- 435. Are there any lakes or swamps in Kansas?
- 436. What are the important minerals of Kansas?
- 437. What State occupies the Geographical center of the United States?
- 438. What State has the least area of useless land?
- 439. Repeat the State motto.

ITEMS OF INTEREST.

LEAVENWORTH.

Leavenworth, the oldest and largest city of Kansas, is an important railroad center, on the west bank of the Missouri.

It is the seat of a Soldiers' Home, a United States military prison, and a school for training young officers for the army.

The principal industries are manufacturing and commerce.

ATCHISON.

Atchison is an important distributing point on the Missouri River, about twenty-five miles above Leavenworth.

It enjoys good railroad facilities and the conveniences of modern cities. The State Soldiers' Orphans' Home is located here.

Manufacturing is a leading industry.

LAWRENCE.

Lawrence is a thriving town, built on both sides of the Kansas River, about twenty-five miles east of Topeka. The State University and a Government Indian School, called Haskell Institute, are located at this place.

TOPEKA.

Topeka, the capital of Kansas, is located principally on the right bank of the Kansas River.

It is the seat of the State Reform School, an Asylum for the Insane, several colleges and the principal offices and shops of the Sante Fé system of railroads. These shops turn out locomotives, cars and railroad machinery of all kinds. Manufacturing is the leading industry.

ARKANSAS CITY.

Arkansas City, on the Arkansas River, just north of Indian Territory, commands most of the trade with the Reservations, Indian agencies and military posts of the Indian Territory. An artificial waterfall, 22 feet in height, fed by

a canal, furnishes abundant water power for the numerous factories.

FT. SCOTT.

Ft. Scott, in the southeastern part of the State, near the Missouri line, is noted for having the largest machine shop west of St. Louis. It was here that sugar was first made from sorghum. The supply of coal, building stone and useful clays, in the vicinity, is excellent, and apparently inexhaustible.

EMPORIA.

Emporia is located southwest of Topeka, in the center of a very rich agricultural region.

It is the seat of a State Normal School, and of the College of Emporia.

GRASSHOPPERS.

During the years 1873, 1874 and 1875, parts of the States of Nebraska, Kansas and Missouri, were completely denuded of vegetation by the ravages of the countless hordes of the Rocky Mountain locust (*caloptenus spretus*) or grasshoppers, as they are commonly and incorrectly termed. This insect is not indigenous to the above named States, but came from parts of North Dakota and Montana, where their usual supply of food had failed. It is estimated that the damage occasioned at that time in those States amounted to over \$50,000,000. This insect is of the same family as those mentioned in the Bible, and make, it is said, a very palatable soup or biscuit.

MISSOURI.

"The Iron State."	"Pukes."	{	Location.	
			Latitude and Longitude.	
Mo.	1821.	{	Rivers.	{ Mississippi. Des Moines.
				{ Missouri. Osage. Kansas.
		{	Mountains.	{ Ozark. Iron.
				{ Pilot Knob.
		{	Cities.	{ St. Louis. Jefferson City.
				{ Kansas City. St. Charles. St. Joseph. Hannibal.
		{	Products.	{ Animal.
				{ Vegetable. Mineral.

SUGGESTIVE KEY WORDS.

391. The Mound City.
392. The Bluff City.
393. Missouri Compromise.
394. Old Bullion.
395. Great Swamp.
396. Iron Mountain.
397. Earthquake of 1811-12.
398. Bushwhackers.
399. Pennsylvania of the West.

QUERIES.

440. What is the State Motto?
441. What battles of the Rebellion were fought in Missouri?
442. Are colored citizens eligible to State offices in Missouri?
443. What is the oldest town?
444. What city of Missouri was besieged during the Revolution?
445. Do paupers vote in this State?
446. Who were the Bald Knobbers?
447. What noted men have lived in Missouri?
448. What is the area of the Missouri River basin?
449. Why is the navigation on the Missouri River dangerous?

ITEMS OF INTEREST.

ST. LOUIS.

St. Louis, the metropolis of Missouri, and of the central Mississippi Valley, extends for 17 miles along the Mississippi River, 20 miles below the mouth of the Missouri River.

It has a large number of immense and elegant fire-proof buildings, and has been growing rapidly during the past few years.

More than thirty-five railroads enter the city. The famous Eads steel bridge, and a new \$2,000,000 freight bridge, span the Mississippi at this place.

St Louis ranks first in its trade in mules and horses, and second in the manufacture of flour.

The city has numerous parks, the most famous of which is Shaw's Botanical Garden; this is said to be the finest in the world. It was private property for many years, but was finally presented to the city by Henry Shaw, the owner.

Manufacture and commerce are the leading pursuits.

JEFFERSON CITY.

Jefferson City, the capital of Missouri, is located on high, rolling land, on the south bank of the Missouri River, near the center of the State.

The principal public buildings are the State House, Governor's Mansion, State Armory, Penitentiary, and Lincoln Institute, an educational institution for colored persons who desire to become teachers.

KANSAS CITY.

Kansas City, the second city in size in Missouri, is situated on the right bank of the Missouri River, near the Kansas border. The principal part of the city is built upon the sides and top of a steep hill.

The principal articles of commerce are lumber, farming implements and grain.

Pork packing is an important industry.

SAINT JOSEPH.

Saint Joseph, a prosperous manufacturing and commercial center, on the Missouri River, a little over 100 miles up from Kansas city, is the third city in size in Missouri.

A fine steel railroad bridge spans the river at this place.

St. Joseph is the seat of a State Asylum for the Insane, and of St. Joseph's College.

SEDALIA.

Sedalia is a thriving town in west central Missouri, and has a good trade in the region between the Missouri and Osage rivers. The locomotive works and car shops are the principal industries.

ST. CHARLES.

St. Charles, on the north bank of the Missouri River, is one of the oldest settlements in the State. It was settled by the Spanish in 1769. A magnificent railroad and wagon bridge crosses the river at this place.

HANNIBAL.

Hannibal, one of the most important cities between St. Louis and St. Paul, is the terminus of several important lines of railway. It is noted for its production of lime and the manufacture of lumber.

Hannibal College and St. Joseph Academy are located here.

JOPLIN.

Joplin, in southeastern Missouri, is in the center of a very rich lead and zinc producing region. Over one-seventh of total zinc product of the world comes from the immediate vicinity of Joplin.

The mining and smelting of zinc and the manufacture of pig lead and white lead, are the most important industries.

At Grand Falls, four miles from Joplin, is the largest electric light and power plant in the world. The city and mines are furnished with light and motive power by this plant.

CALIFORNIA.

"The Golden State."

"Gold Bugs."

Cal.

1850.

Boundary.

Area.

Population.

Pacific Ocean.

San Francisco Bay.

Lake Tulare.

Rivers.

{	Sacramento.
	San Joaquin.
	Colorado.

Cape Mendocino.

Islands.

{	Santa Barbara.
	Mare.

Deserts.

{	Colorado.
	Mojave.

Mountains.

{	Sierra Nevada.
	Coast Range.

Peaks.

{	Whitney.
	Shasta.

Cities.

{	San Francisco.
	Sacramento.
	San Jose.
	Los Angeles.
	Stockton.
	Oakland.

Products.

{	Animal.
	Vegetable.
	Mineral.

Curiosities.

SUGGESTIVE KEY NOTES.

- 400. Golden Gate.
- 401. Yosemite Valley.
- 402. Silk Culture.
- 403. Ostrich Farming.
- 404. Argonauts of '49.
- 405. Seasons.
- 406. Coolies.
- 407. The Summerland of America.
- 408. The Queen City of the Pacific Slope.
- 409. City of Angels.
- 410. The Olive Culture.
- 411. Leland Stanford University.
- 412. State Park of California.
- 413. Joss Houses.
- 414. United States Mint.
- 415. Grape Culture.
- 416. Lava Beds.
- 417. Vigilantes.
- 418. The Lick Telescope.
- 419. The City of Oaks.
- 420. Geyser Region.

QUERIES.

- 450. Who first explored California, and what was it called?
- 451. Where is the United States Navy Yard in California?

452. How old are the big trees?
453. Which is larger, New England or California?
454. How many Rhode Islands could be made of California?
455. Which is the longer, the length of California or the distance from New York to Chicago?
456. Relate the story of John Marshall, or the discovery of gold.
457. What is the motto of California?
458. How are the big trees cut down?
459. With what disadvantages do the Californians have to contend?
460. Where are the quicksilver mines? Use of quicksilver?
461. Describe one of the old Spanish Indian Missions, and tell how the Indians were treated.
462. What are the highest falls in the world? How high?
463. Where is there a noted graphite mine?
464. What islands noted for the production of eggs for San Francisco market?

ITEMS OF INTEREST.

SAN FRANCISCO.

San Francisco has the only natural harbor between San Diego on the south, and Astoria on the north.

This city is the chief emporium of the Pacific coast, and is one of the wealthiest cities of America, the home of many

millionaires. The area of the city is about 41 square miles, with a population of nearly 300,000. It has fine public buildings, palatial residences, and business industries that almost rival those of the East.

The Palace Hotel is nine stories high, cost six million dollars, and can accommodate 1,200 guests. An oil refinery here works up the product of the Pacific whaling fleet.

The facilities for ship building are not excelled in any country. The wharf and docks with the commerce of nations, are objects of interest.

There are many public parks, theaters, and other places of amusement.

One interesting part of the town is Chinatown, where thousands of Chinese live as they do at home. They eat with chop-sticks and have their theatres, joss-houses, opium dens and gambling places. The Cliff House, the Seal Rock, and Lone Mountain cemetery are sights which all visitors should see.

We purposely leave the other cities of California for busy work. There are many other things to be talked about that are perhaps more interesting.

THE BIG TREES.

The large redwood trees of California have a world wide notoriety. A special agent of the General Land Office makes the following report in regard to the number: "There were 2,675 trees found which measured over 45 feet in circumference, three feet above the ground. Forty-four are over 80

feet in circumference and several are more than a hundred. One is 106 feet in circumference, or a little more than 35 feet in diameter.

The United States Congress has set apart and reserved Mariposa Grove as a public park. The area consists of a tract about two miles square. There are numbers of these groves in different parts of the State. A large part of this marvelous timber on the Tule river has been purchased by private parties and is being cut down as fast as possible. Hundreds of trees, 20 and 30 feet in diameter have been destroyed. In this same region there was cut a monster tree 41 1-3 feet in diameter and 250 feet high.

Many of the trees have received names, as "Mother of the Forest," "Father of the Forest," "Picnic Tree," "Grizzly Giant," "Keystone State," etc.

One of the large trees in felling required five men twenty-two days. After the trunk was severed it required three days' work with immense wedges to topple it over. The bark was a foot and a half thick.

The first branch of the Grizzly Giant, about 200 feet from the ground, is six feet in diameter.

A BIG DAM.

What will be the largest dam in the world is to be constructed in the San Mateo Canon in California. The dam will consist of a solid wall of concrete from hillside to hillside. It will be 700 feet long and 170 feet high, 175 feet thick at the base, and twenty feet thick at the top. The

reservoir which will be formed by this dam will have a capacity of 32,000,000 gallons, and sometime in the future will be connected with the San Francisco water-shed by a tunnel five miles long.

THE DEATH VALLEY.

Death Valley is a volcanic region eight by forty miles long in Southern California. Its bed is over 150 feet below the sea level and the rocky sides rise from one to two thousand feet. A river sinks out of sight in this valley. The air is intensely hot so that it is impossible to get much information on this subject.

It is even supposed that gases are emitted from cracks in the rocks, but this is not certainly known. It does not support animal life, hence the name.

A surveyor reports the temperature at 130° Fahr., and that a man could not do without water there for an hour without becoming insane.

IRRIGATION.

Southern California is one of the few places which are doubly blessed with the wealth of two zones. For six months no rain falls, and the value of water cannot be appreciated by those who have not lived in such a country. There is a saying, "If a man buys water he can get the land thrown in."

There are four systems of irrigation practiced,—by flooding, which is wasteful; by furrows, where the streams are run through narrow ditches prepared for it; by basins, where

the water is brought by pipes or flumes and discharged where needed, and by sub-irrigation, where the water is carried under ground and by opening valves the water moistens the soil but never comes to the surface. Every drop of water is valued, owned and utilized. Many troubles originate in regard to the water rights.

A CALIFORNIA FARM.

The description selected is that of a ranch (Baldwin's) in the San Gabriel Valley. It is a part of the Old San Gabriel Mission.

This farm has 1,500 acres of oak grove, 4,000 acres of grain, 500 acres of hay land, 150 acres in orange orchards, 50 acres in almonds, 60 acres in walnuts, 25 acres in pear trees, 50 acres in peaches, 20 acres of lemons, 500 acres in vines, small orchards of apricots, chestnuts and hazel nuts, besides thousands of acres of good pasturage. A visitor here would certainly be reminded of the "Vale of Cashmere," as described by Tom Moore. The entire estate exceeds 80,000 acres, one half of which is one immense sheep ranch. The fruit harvest continues all the year round. From January to May is the main orange harvest, though oranges hang on the trees all year. Currants, nectarines, apricots, figs, etc., are gathered in June. Apples, pears and peaches, are picked in July and August. Grapes are ripe in August and last until January.

A QUEER BRIDGE.

In Sonoma County, a queer but successful piece of railroad engineering is found.

Between certain mills and the forests of redwood trees, is a deep ravine. In order to cross the ravine, the trees were sawed off on a level, and timbers and ties were laid on the stumps. Two huge redwood trees stand in the center of the ravine, with their tops cut seventy-five feet from the ground.

Cars heavily laden pass over this bridge in perfect safety.

In the Colorado desert, there is a large bed of rock salt, and the Southern Pacific Railroad is laying a tract to the salt bed, and has been obliged to grade the road with blocks of these crystals. This is the only instance where the road bed is laid and ballasted in salt. The sea, which once rolled over that place, dried up, and left a vast bed of salt nearly fifty miles long.

There is a remarkably large deposit of marble found in southern California.

There are eleven shades of marble.

Mono Lake is estimated to hold 78,000,000 tons of sodium carbonate.

Thunder and lightning are exceedingly rare on the Pacific coast. A genuine thunderstorm has visited California but twice in twelve years.

SALTON LAKE.

Salton Lake was discovered one morning in June, 1891. Its earliest appearance in history was just after the Rio Colorado had silted up its mouth until the sediment had made a filling clear across the old Gulf of California. The latter was then about twice as long as it is now. After the filling occurred, the northern part dried up; the southern part is still the Gulf of California. In the desiccated northern part there were two "holes" rather deeper than the average. One of these is now Death Valley, Arroyo del Muerte; the other has been known by the names Sink of the San Felipe, and latterly Salton Lake. If on any map of California you will draw a line from Los Angeles, California, to Yuma, Arizona, two-thirds of the distance from the former place will take you to the edge of a "dry lake." The latter is now Salton Lake, and is about 300 feet below sea level in its lowest place. The Southern Pacific Railway crosses it at a point 267 feet below sea level. Several years ago the Colorado overflowed its banks, and one of the overflows became quite a formidable stream, sending a flood of water many miles into the desert to the westward, most of which is much lower than the river's level. Last year the river turned nearly the whole of its current through this crevasse, and the overflow was pushed into the sink. Thus the sink became Salton Lake.

OREGON.

Or. 1859.	{	"Web-footed State."	Boundary.	
			Area.	
		"Hard Cases."	Pacific Ocean.	
			Rivers.	{ Columbia. Willamette. John Day. Snake.
			Cape Blanco.	
			Mountains.	{ Cascade Mountains. Blue Mountains. Mount Hood. Mount Pitt. Mount Jefferson.
			Lake Klamath.	
			Lava Beds.	
			Cities.	{ Salem. Portland. The Dalles. Astoria.
			Products.	{ Animal. Vegetable. Mineral. Manufactured.

SUGGESTIVE KEY WORDS.

421. Modoc War.
 422. Bald Hills.
 423. Grande Ronde.

- 424. Great Fremont Basin.
- 425. Glaciers.
- 426. The Cascades.
- 427. Sallal Berry.
- 428. Donation Law.
- 429. Hot Lake.
- 430. Inland Empire.

QUERIES.

- 465. Why was Oregon so named?
- 466. What town in this State was made famous in one of Washington Irving's literary productions?
- 467. Are there any volcanoes in Oregon?
- 468. What two seasons in Oregon?
- 469. By what men was Oregon first explored?
- 470. Who named the Columbia River? Why name it *Columbia*?
- 471. Are oysters found along the Pacific coast?
- 472. How do vessels pass the Willamette Falls?

ITEMS OF INTEREST.

PORTLAND.

Portland, the metropolis of Oregon, is situated on the left bank of the Willamette, twelve miles above its mouth.

It is easily reached by the largest ocean vessels, and has a large trade direct with foreign countries.

It handles most of the commerce of the Columbia River

region, and has large manufactures of lumber, iron ware, vehicles, leather goods and furniture.

Salmon fishing and canning, is one of the leading occupations.

Portland has excellent railroad facilities, and enjoys an extensive wholesale trade.

SALEM.

Salem, the capital of Oregon, is located on the right bank of the Willamette River, about 50 miles above Portland.

The excellent water power is utilized by many factories of various kinds. The principal articles of manufacture are flour, lumber, woolen goods, stoves, vehicles and farming implements.

The principal public institutions located here are Willamette University, Institute for Deaf and Dumb, School for the Blind, Asylum for the Insane, Orphans' Home and Oregon penitentiary.

A Government Indian Industrial School is located five miles north of Salem.

THE DALLES.

The Dalles is a thriving town on the south bank of the Columbia, about 200 miles from its mouth.

Salmon fishing and canning is the leading industry, but the city has also a large trade in grain, flour and lumber.

More salmon are found in the Columbia than any other river. They are caught principally by immense fish wheels whose paddles are furnished with pockets of netting. The wheels are caused to revolve by the river current, and as the salmon attempt to ascend the river they are scooped up in the wheel-pockets, and are thus captured. During the season of 1890 over 4,400 tons were shipped from The Dalles alone.

The scenery along the river in this vicinity is picturesquely grand.

ASTORIA.

Astoria, named in honor of John Jacob Astor, under whose management it was founded, in 1811, is located on the south bank of the Columbia River, about 12 miles from the ocean. Salmon fishing is the principal occupation, more than three thousand persons being engaged in catching, and over two thousand are occupied in the canneries.

Several streets are built over the water upon piles driven deep into the earth below. Ship building and the manufacture of lumber are important industries.

WILLAMETTE VALLEY.

This valley, lying between the Cascade and Coast Range Mountains, has an area of about 7,500 square miles, and is one of the most fertile regions in the world. All the crops and fruits, common to the temperate zone, can here be grown to perfection and in great abundance. Bordering upon the

valley are thousands of acres of "foot hills" that afford excellent pasturage and are devoted to grazing.

The Falls of the Willamette at Oregon City now afford a power of over 200,000 horse power. The river here descends about 40 feet.

CRATER LAKE.

Lake Crater, the deepest inland water in the United States, is located in southwestern Oregon. Its shores are so steep that the surface of the water can be reached at only a few points.

The depths measured were from 835 feet to 1996 feet, and it is believed that there are still greater depths.

The altitude of the Lake is over 7,000 feet.

HOW THE NORTHWEST WAS SAVED.

Oregon and Washington are now bound to the Union by iron bands. Fifty years ago a statesman came near trading them off to Great Britain. The foresight of a home missionary, Dr. Marcus Whitman, saved them to the nation.

Dr. Whitman had crossed the plains and the mountains to Oregon, and knew, from a few years' experience, the value of the country. He also knew that the Hudson Bay Company were anxious to obtain possession of the whole Northwest, and had circulated the report that it was impossible for immigrants to cross the mountains in wagons.

At a dinner given in 1842, where the doctor and several of the company's chief officers were present, news was received that a band of British immigrants had crossed the

mountains. Toasts were drank in honor of the event. "Now the Americans may whistle; the country is ours," said one of the Englishmen, boastingly.

"God help me, the country is not yours!" said the doctor to himself, as he left the table. The next day he started for Washington on horseback. He made the journey in winter, and with frozen limbs called on Daniel Webster, the Secretary of State. On presenting the case, he was bluffly told by Mr. Webster that the country was worthless.

"Wagons cannot cross the mountains," said the secretary. Sir George Simpson who is here affirms that. I am about trading that worthless region for some valuable concessions in relation to the Newfoundland fisheries."

Finding that a treaty had already been approved by the Senate and was awaiting formal ratification and the signature of President Tyler, Dr. Whitman sought the president. After listening to his story, Mr. Tyler said,—

"Dr. Whitman your frozen limbs and leather breeches attest your sincerity. Can you take emigrants across the mountains in wagons?"

"Give me six months and I will take one thousand emigrants across," answered the doctor."

"Well," replied the president, "if you take them across the treaty shall not be ratified."

In 1843, a band of emigrants, under the guidance of the doctor, started from Missouri for Oregon. A deputation from the Hudson Bay Company met them on the plains, who affirmed that it was impossible to cross the mountains with

their wagons. The emigrants almost decided to leave their wagons and finish the journey on horseback.

As this course would have ruined Dr. Whitman's plan of saving Oregon to the United States, he labored with the leaders of the band until they consented to follow the Doctor's advice and guidance. The band did cross the mountains in their wagons, and the treaty was not ratified, and the fertile Northwest was saved to the Nation.

WASHINGTON.

Washington. 1889.	{	Boundary.	
		Comparative size.	
		Pacific Ocean.	
		Puget Sound.	
		Strait of Fuca.	
		Haro Canal.	
		Capes.	{ Flattery. Hancock.
		Rivers.	{ Columbia. Snake. Spokane.
		Mountains.	{ Cascade. Coast Range. Mount Ranier. Mount Baker.
		Cities.	{ Seattle. Tacoma. Olympia. Walla Walla.
		Products.	{ Fish. Grain. Hops. Coal. Iron.

ITEMS OF INTEREST.

SEATTLE.

Seattle, the metropolis of Washington, is situated on Elliott's Bay, an arm of Puget Sound. Manufacturing and

commerce are the principal industries. The State University is located here. The city enjoys all the advantages of modern cities.

Seattle was named from an Indian chief.

TACOMA.

Tacoma, one of the most prosperous cities of Washington is located on Commencement Bay, an inlet of Puget Sound. It has an excellent natural harbor, capable of safely floating the largest vessels. It is the western terminus of the Union Pacific Railroad.

Tacoma is in the center of a country rich in resources, both for agriculture, manufacturing and commerce. Ship building, manufacture of lumber, and exportation of grain and coal, are important industries. The scenery in this vicinity is grandly beautiful.

The "Anna Wright Seminary" (for females) is located at this place.

WALLA WALLA.

Walla Walla is a thriving town of southeastern Washington, on the Walla Walla River. It is in the midst of a very rich agricultural region, and is the seat of Whitman College, the State Penitentiary, and a United States army post.

WEeping TREES.

In the forests of Washington and surrounding country there are trees which weep copiously in clear, bright days when no dew is visible elsewhere.

The dripping is so profuse that the ground underneath is almost saturated. The phenomenon in this case is caused by the remarkable condensing power of the leaves of the fir, and it occurs only when the relative humidity is near the dew point. The dripping ceases after 10 or 11 o'clock in the morning, but resumes at or near sunset.

OLYMPIA.

Olympia, the capital of Washington, is a small city located on a peninsula at the head of Puget Sound. Good water power is furnished by a small river that enters the Sound at this place. Extensive and valuable forests of fir are in this vicinity.

SPRAGUE.

Sprague, about 40 miles west of Spokane Falls, is the seat of the Northern Pacific repair shops, and is an important shipping point for grain and stock

PORT TOWNSEND.

Port Townsend, a thriving city on Puget Sound, about 90 miles from the Pacific Ocean, is the port of entry for the Puget Sound District. A country rich in agriculture and mineral resources surrounds it. It handles most of the trade with Alaska, and has important manufacturing interests.

The great timber resources of the Pacific Northwest can scarcely be realized by those who have not visited the immense forests of giant trees, growing so close together in

many places that it is almost impossible to travel through the woods. Twenty million acres of land are covered with a growth of wood which will cut an average of 25,000 feet of merchantable lumber. Much of it will cut an average of 100,000 feet or more, while single trees are common that will cut 3,000 feet each. The Port Townsend *Leader* estimates the quantity of merchantable lumber, standing in the forests of Washington, at 160,000,000,000 feet—sufficient to supply all markets of America for generations, and yet send fleets laden with ship timbers to every port of the civilized world. Oregon, in the Coast and Cascade ranges, and in the counties along the ocean from the Columbia River to the California line, has as much more timber, and these two great sister States, unless devastated by forest fires, will never run short of building material.

At Port Gamble the visitor is shown the stump of the tree that nourished the spars for the GREAT EASTERN, and is told of the flag staff, 185 feet long, which was cut for the Boston Jubilee, but owing to a crooked road it could not be sent in time.

The logs are cut by two circular saws, which saw from above and below, each saws one-half the log. The ordinary log cuts are 24 and 32 feet long. Sometimes 100-foot cuts are made for special purposes.

MONTANA.

<div> <div>“The Treasure State.”</div> <div>Mon. 1889.</div> </div>	{ Location,	
	{ Comparative size.	
	Rivers.	<div> <div>{ Missouri.</div> <div>{ Milk.</div> <div>{ Yellowstone.</div> <div>{ Big Horn.</div> <div>{ Clark's.</div> </div>
	Mountains.	<div> <div>{ Rocky.</div> <div>{ Bitter Root.</div> </div>
	Cities.	<div> <div>{ Helena.</div> <div>{ Butte City.</div> <div>{ Ft. Benton.</div> </div>
	Products.	<div> <div>{ Animal.</div> <div>{ Mineral.</div> </div>

LARGEST COUNTY.

The county of Custer in Montana is the largest county in the United States. It contains 13,569,920 acres, and is 150 miles long and 125 miles wide. It is a place of historic interest, containing, as it does, the site of the great battle of Little Big Horn, where Custer and his force were massacred.

MONTANA TUNNEL.

Eighteen miles from Helena there is a tunnel 6,200 feet long. It runs through a large mountain of the Boulder divide.

A CURIOUS RABBIT.

What is known as a snow rabbit, that came from the region near the head waters of the Yellowstone River, has

been exhibited at the Smithsonian Institute, Washington. It has feet nearly as broad as the human hand, that serve the same purpose as the snow shoes of the Indian or hunter. Its principal food is Juniper berries and Alpine seed. The question arises: How came the rabbit to have those broad feet? Could generations of common rabbits, by running for thousands of years on the snow, have developed these natural "snow-shoes?"

HELENA.

Helena, the capital and principal commercial city of the State, is situated in the west central part of the State, in Prickly Pear Valley, about 12 miles from the Missouri River.

The principal business is mining, manufacturing and commerce. Gold and silver are the principal minerals produced.

In 1889, a gold bar, weighing 7,000 ounces, and worth \$101,385.50, was cast here. It was the largest gold bar ever made.

A good plan to do here, if time permits, is to describe a noted cattle ranche, the cow boys, and their manner of living, the marking and branding of the cattle, the round ups, and the stampede of the cattle.

Tell of the dangers on the prairies of fire, of storms, of wild beasts, and even Indians.

GREAT FALLS.

Great Falls, near the center of the State, on the Missouri River, is near the only series of falls on the whole river.

Within a distance of ten miles, the river descends over 500 feet. This great water power and the great mineral resources in the immediate vicinity, will doubtless make this a great manufacturing city. Coal, lead, silver, iron and copper are found in abundance.

BUTTE CITY.

Butte City, named for the mountain peak, Big Butte, is the largest mining city in the world. It is located about 60 miles southwest of Helena.

Copper, silver and gold are the principal minerals mined, crushed and smelted here. The value of the product of Silver Bow County, of which Butte City is the county seat, for 1890, was over \$26,000,000. Butte City enjoys all the conveniences of a modern metropolis, and is sometimes called "The Silver City."

IDAHO.

Idaho. 1890.	{	Boundary.
		Comparative size.
		Rivers. { Snake.
		{ Clark's.
		Bitter Root Mountains.
		Cities. { Boise City.
		{ Idaho City.
		{ Spokane Falls.
	{	General list of products.

ITEMS OF INTEREST.

SPOKANE FALLS.

Spokane Falls has had a remarkable experience, as shown by the following clipping from a Chicago daily newspaper:

“For a city to suddenly find itself in another State without being removed, is a new municipal experience; but this has been realized in the wild and woolly West. It is now said that the boundary line between Idaho and Washington is thirty miles farther west than was supposed, so that Spokane and its 30,000 inhabitants, and a thickly settled strip of territory, are added to Idaho.”

The river here descends about 150 feet, in the distance of half a mile, affording immense water power that is used by the many factories of various kinds. A very rich farming country stretches north, west and south of the city, while to the eastward are the Coeur D'Alène Mountains, with rich deposits of gold, silver, copper and mica. The scenery along the river, below the city, is very picturesque.

BOISE CITY.

Boise City, the capital of Idaho, is located on the Boise River, in the southwestern part of the State. The valley is very fertile, and the neighboring mountains are rich in minerals.

The climate is salubrious. The city is supplied with mountain water. A little stream flows through every street.

A United States assay office is located here.

MOSCOW.

Moscow is a thriving town located in western Idaho, in the center of a rich agricultural region. An immense and excellent supply of timber is near at hand on the mountain sides. It is the seat of the University of Idaho.

WYOMING.

Wyoming. 1892.	"Wonderland of America."	{ Location.	
		{ Comparative size.	
		{ Rivers.	{ Big Horn.
			{ Big Cheyenne.
			{ North Platte.
			{ Green.
		{ Mountains.	{ Rocky.
			{ Big Horn.
		{ Fremont's Peak.	
		{ Cities.	{ Cheyenne.
			{ Laramie City.
		{ Yellowstone Park.	
		{ Products.	

Wyoming is, at present (1892), the youngest member of the sisterhood of States.

Its area is about 100,000 square miles, its breadth from east to west being 365 miles, and from north to south 275 miles. The general appearance of the country is mountainous, with valleys, broad rolling plains, sloping foothills, and bold bluffs and buttes. The elevation ranges from

3,500 to 14,000 feet above the sea level. There are lofty mountain ranges covered with everlasting snow, deep canons and elevated plateaus forming natural parks, of which the most celebrated is the Yellowstone National Park. The present population of Wyoming is estimated at from 60,000 to 75,000 whites. The Indians are all on reservations, are peaceful, and are being educated to mechanical and farming pursuits.

Stock raising is the most important industry. In 1888 the range stock numbered 2,000,000 cattle, 1,000,000 sheep and goats, and 100,000 mules and horses, all worth, in round numbers, \$75,000,000. The grazing lands represent about one-half the area of the new State

The new State is rich in minerals, 30,000 square miles of its surface being underlaid by coal-bearing strata alone. The output of coal in 1889 was 1,813,420 tons. Besides coal there are iron, deposits of soda, sulphur, salt, slate, gypsum, copper, tin, mica, marble, sandstone, magnesia and other minerals. Both lode and placer gold mines abound. Extensive placer mines have been discovered during the last year, near the head of the Big Sandy River, and a company has been formed to construct a canal to work the mines by hydraulic methods. The oil fields are extensive, covering a belt thirty miles wide and 200 miles long. Mineral springs of different kinds have been found in various sections, and some of them have become popular resorts.

The farm products are the usual grains of the temperate zone, and alfalfa, which furnishes three cuttings per year.

The Union Pacific Railroad traverses the southern border of the new State, and has several branch lines to the north and south. There are schools wherever there are enough children to attend, and good teachers. Wyoming is larger than New England, and has more natural resources of all kinds. Its water power is unlimited, and its facilities for manufacturing industries are of the best. At the present time there are ten organized counties in Wyoming. Cheyenne is the capital and the largest town.

CHEYENNE.

Cheyenne, the capital of Wyoming, is located in the southeastern part, about 40 miles from Nebraska, and 12 miles from Colorado. It is in the center of a great stock-raising territory, and is the home of many wealthy ranch owners.

The Union Pacific Railroad and a branch of the B. & M. road have costly depots here. Ft. Russel, a few miles west, is the largest United States military post in that region.

LARAMIE CITY.

Laramie City, about 60 miles west of Cheyenne, on the Union Pacific Railroad, is a thriving town surrounded by a country well adapted to agriculture and grazing.

It has excellent schools and is the seat of the University of Wyoming. The State Fish Hatchery and a United States Penitentiary are located here.

The Soda Lakes, 13 miles south of Laramie, cover over one hundred acres and contain many million cubic feet of pure sulphate of soda, in a crystallized condition. The deposit of soda is from 9 to 12 feet in thickness.

RAWLINS.

Rawlins is a Government distributing point, the third in size in the State. The Union Pacific have shops and round house here.

There are quarries of fine building stone near.

The most valuable mine in the Rockies for raw material of which red metallic paint is made, is within a few miles of this place.

It is the seat of the State penitentiary.

THE NATIONAL PARK.

This Park, 55 by 65 miles in area, is located principally in northwestern Wyoming, but partly in Montana and Idaho. We shall only enumerate a few of the sights, leaving the descriptions for busy work. Good descriptions may be found in railroad folders, guide books, etc.

Mammoth Hot Springs.

The Mud Volcanoes.

Obsidian Cliffs.

Petrified Forests.

The Yellowstone Lake.

Sulphur Hills.

The Giant Geyser.

Old Faithful.

The Paint Pots.

The Hoodoo Region.

The Fauna and Flora.

Midway Basin.

Upper Geyser Basin.

Gibbon Canon and Falls.

Morris Geyser Basin.

The Upper Falls.

Lake Yellowstone.

“There is nothing in the Park, [writes Prof. Whitwell], there are few sights in the world so wondrous and so weird as the GREAT FALLS and GRAND CANON OF THE YELLOWSTONE. The scene from the brink of the falls, looking into the profound depth of the canon, is of strange majesty and indescribably awe-inspiring. The advancing volume of water flows rapidly and compactly to the brink, and falls with a tremendous shock into a large, circular, foaming caldron, bounded by cliffs a thousand feet high. Along the sides of the canon, the walls are in many places fashioned into pyramids. The tints of yellow, deep red, etc., are due to the action of the hot springs, the weather, the presence of sulphur and the oxidation of iron, which here as elsewhere, is Nature’s principal pigment. I can echo the words of the Rev. Dr. Wayland Hoyt—that to have seen the Grand Canon of the Yellowstone is an epoch in my life. The Crater of Vesuvius is the only place in which I remember to have seen such a variety and wealth of natural color; but where the palette and pencil fail, how feeble the pen! John Ruskin should see and tell of this place.”

NEVADA.

"The Silver State." "Sage Hens." Nev. 1864.	{	Location.
		Comparative size.
		Rivers. { Colorado. { Humboldt.
		Lakes. { Tahoe. { Walker's. { Pyramid.
		Great Interior Basin.
		Cities. { Carson City. { Eureka. { Virginia City.
		General list of products.

ITEMS OF INTEREST.

CARSON CITY,

The capital of Nevada, is situated on Carson River, about 10 miles from Lake Tahoe. It is the oldest town in the State, and was named in honor of the famous scout, Kit Carson.

The manufacture of mining and mill machinery, is an important industry.

Besides the Capitol, the Orphans' Home and a State Prison are here located.

RENO,

On the Truckee River, about 50 miles from Virginia City, is a flourishing town, and an important distributing point for that region. At this place are located the University of Nevada, the State Asylum for the Insane, a State Prison and the buildings of the State Agricultural Society.

VIRGINIA CITY,

In the western part of the State, is the largest town in the State.

It has had a checkered career—sometimes “booming,” and again almost depopulated.

Mining is the business of the place.

Water for the town is brought 21 miles in pipes and flumes from Lake Marlette.

LAKE TAHOE.

Lake Tahoe is the highest navigable water in the United States, and lies among the snow-clad mountains of Sierra Nevada.

This lake is particularly noted for its mountain scenery, for the remarkable clearness of the water, and for being one of the most picturesque summer resorts of the West.

Water spouts are of frequent occurrence here, owing to the great mountain chasms down which conflicting currents of air are brought to bear on the lake.

It has been said that more cyclones and water spouts can be seen in a single season on this lake than a sailor would see in three years' service on the ocean. Steamboats ply on the lake during the summer season.

Ferns, lilies and other flowers of all shades and colors bloom in profusion during July and August, around this lake, at an altitude of 6,250 feet above sea level.

SILVER MINES.

The great silver deposits of the world—those of them which are known—were all discovered by accident.

The celebrated Comstock lode, richest of all silver mines, was a chance find. In the summer of 1859, Peter O'Riley and Pat McLaughlin were located at Gold Hill, Nevada.

They were working for gold, and were in hard luck. Needing water for their rockers, they dug a hole four feet deep and came upon an outcropping of the marvelous lode. It was a bed of black sulphide of silver. The men did not know what it was, but tried it for gold, and were astonished to find the bottoms of their rockers covered with the yellow stuff, which they were soon taking out at the rate of \$1,000 a day. "Old Pancake" Comstock, another prospector, so called because he fed on pancakes chiefly, claimed and secured a share in the property. They all were in the habit of heartily cursing the "infernal blue sand," subsequently proved to be silver ore, which clogged the rockers. The famous "Big Bonanza" was a slice of ore, nearly half silver, 180 feet in width, and of unknown depth, extending across the Comstock Lode. For many years past it has yielded from \$600 to \$1,000 a ton.

Good luck seldom attends those who discover mines. Comstock sold his share for \$11,000, went broke, and blew his brains out. O'Riley disposed of his slice for \$50,000, lost the money, and went to prospecting again. He became insane and thought he heard voices in the rocks, prattling of great crevices filled with pure silver, and caverns lined with gold. Finally he was shut up in a lunatic asylum. "Old Virginia" Finnimore, who located a claim on the lode, and gave his name to Virginia City, baptizing it with a bottle of whisky, was thrown, while drunk, by a bucking mustang, and killed.

Silver has one interesting use that is very little known. Nearly all good mirrors are backed with it, and not with mercury, as is generally supposed. Before it is put on, the

glass has to be cleaned with the utmost care. Everything depends on that, because if it is not perfectly clean the metal will flake off.

UTAH.

1894.	{	Location.	
		Lakes.	{ Great Salt Lake. Utah.
Utah	{	Rivers.	{ Green. Jordan.
		Wasatch Mountains.	
		Great Salt Lake Desert.	
		Cities.	{ Salt Lake City. Ogden.
		List of Products.	

ITEMS OF INTEREST.

SALT LAKE CITY,

The capital of Utah, and the principal city of Mormondom, on the Jordan River, about 15 miles from the Great Salt Lake. The city covers an area of nine square miles, and has a population of 50,000.

The Mormon Temple, 100x200 feet, is built of white granite, and cost \$10,000,000.

Manufacturing and smelting are the leading industries.

The streets of the city are wide, well shaded, and have in each running streams of water. The water is brought from a mountain stream. Water for irrigation is brought 20 miles from Utah Lake.

PREVO,

The "Garden City of Utah," is located on Utah Lake, about 45 miles south of Salt Lake City. The country has a fertile soil and produces good crops. Wool is the principal export. The city has excellent water power, and rich mines of coal and iron are near at hand. The most important manufactures are woolen goods, flour, lumber and fire-proof paint.

OGDEN,

A prosperous town, and the leading railroad center of Utah, is located at the junction of Weber and Ogden rivers, not far from Great Salt Lake. It is the meeting point of the Union Pacific Railroad, from the east, and the Central Pacific Railroad from the west. Its being the terminus of many railroads was probably the origin of its nickname, "Junction City."

Streams of water, brought from the mountains, flow in every street.

The principal mineral products in the neighborhood are iron, salt, lime, building stone and coal.

The excellent water power furnished by the falls in Ogden canon is just beginning to be used by manufacturing establishments.

SALT LAKE.

Four barrels of water of the Great Salt Lake will leave, after evaporation, nearly a barrel of salt. The lake was discovered in the year 1820, and no outlet has yet been ascertained. Four or five large streams empty themselves into it; and the fact of its still retaining its saline properties seems to point to the conclusion that there exists some secret bed of saline deposit over which the waters flow, and

that thus they continue salt—for though the lake may be the residue of an immense sea, which once covered the whole of that region, yet by its continuing so salt, with the amount of fresh water poured into it daily, the idea of the existence of some such deposit, from which it receives its supply, seems to be only too probable. For the past fifteen years, until last year, the lake has been gradually rising; but in 1879 it receded two or three feet—a most unusual occurrence—owing to the exceptionally warm weather. There are no fish in the lake, but myriads of small flies cover its surface. The buoyancy of the water is so great that it is not an easy matter to drown in it. The entire length of Salt Lake is eighty-five miles. Compared with the Dead Sea, the Great Salt Lake is longer by forty-three miles, and broader by thirty-five miles. The Mormons visit the lake in large numbers for the purpose of bathing. Their bodies are all encrusted with salt, upon coming out of the water, and many of them say their health is improved by dressing with the salt upon their bodies.

There are ten iron mountains in Iron County, in Utah, estimated to contain 130,000,000 tons of ore. Utah is richer in iron than any other section of the United States.

THE VALLEY OF DEATH.

The Valley of Death, a spot almost as terrible as the prophet's valley, of dry bones, lies just north of the Old Mormon road to California, in Utah—a region thirty miles broad, and surrounded, except at two points, by inaccessible mountains.

It is totally devoid of water and vegetation, and the shadow of bird or wild beast never darkens its white, glaring sands.

The Kansas Pacific railroad engineers discovered it, and some papers which show the fate of the lost "Montgomery train," which came south from Salt Lake in 1850, guided by a Mormon.

When near Death's Valley, some one came to the conclusion that the Mormon knew nothing about the country, so they appointed one of their number as leader, and broke off from their party.

Their leader turned due west; so with the people and wagons and flocks, he traveled three days, and then descended into the broad valley, whose treacherous mirage promised water. They reached the center, but only the white sand, bounded by scorching peaks, met their gaze.

Around and around the valley they wandered,, and one by one the men died, and the panting flocks stretched themselves in death under the hot sun. Then the children, crying for water, died at their mother's breast, and with swollen tongues and burning vitals, the mothers followed. Wagon after wagon was abandoned, and strong men tottered, and raved, and died.

After a week's wandering, a dozen survivors found some water in the hollow of a mountain. It lasted but a short time, when all perished but two, who escaped out of the valley, and followed the trail of their former companions.

Eighty-seven families, with hundreds of animals, perished here, and now, after seventy-two years, the wagons still stand complete, the iron work and ties are bright, and the shriveled skeletons lie side by side.

COLORADO.

Col. 1876.	"Centennial State." "Rovers."	Boundary.				
		Area.				
		Rivers.	{	South Platte.		
				Republican.		
				Arkansas.		
				Rio Grande.		
				Grand.		
		Rocky Mountains.	{	Green.		
		Peaks.	{	Long's.		
Pike's.						
Spanish.						
Cities.	{	Denver.				
		Leadville.				
		Colorado City.				
		Gunnison.				
Products.	{	Animals.	{	Wild.		
				Domestic.		
	{	Vegetable.	{	Cattle.		
				Horses.		
				Sheep.		
	{	Mineral.	{	Grains.		
				Fruits.		
				Timber.		
	{		{	Gold and Silver.		
				Lead and Copper.		
Coal and Iron.						
Oil and Stone.						

SUGGESTIVE KEY WORDS.

432. Queen City of the Plains.
 433. Snow Line.
 434. The Divide.

- 435. Mountain of the Holy Cross.
- 436. The Balanced Rock.
- 437. Monument Park.
- 438. Grand Caverns.
- 439. Echo Lake.
- 440. Chaik Cliffs.
- 441. The Ute Pass.

QUERIES.

- 472. Why are there no cats in Leadville?
- 473. Why must people on the mountain tops do without boiled eggs?
- 474. Describe the cog-railway up to the signal station, on Pike's Peak.
- 475. What rivers rise in the mountains of Colorado?
- 476. For what diseases is the climate of Colorado beneficial?
- 477. What explorers once visited this region?
- 478. Are there any railroad tunnels through the Rocky Mountains?
- 479. What is meant by "salting" a mine?
- 480. What is the highest peak in Colorado?

Some Monday morning place the word "Mines" on the blackboard for a Friday afternoon talk. Let every pupil be required to be ready to say something upon, or pertaining to that subject, and the more the better.

ITEMS OF INTEREST.

Colorado, like ancient Gaul, is divided into three parts; the mountain range, including the peaks; the foot hills, and the plains.

In the mountain range are over 200 peaks, each nearly 13,000 feet high, and two dozen peaks each over 14,000 feet

in altitude. Among several ranges of mountains are the famous North, South, Middle, and San Louis Parks.

The parks are surrounded by mountain ranges, and are remarkable physical features of Colorado. From these plateaus issue the great streams which flow in all directions from this State. These plateaus are broken by valleys, wherein grow grasses, and flowers, and by hills covered with forests, wherein wild game abounds.

Among the many attractions of this region are the peaks, the great mines of gold and silver, Manitou and its curious formations of nature, Cheyenne Mountain, distinguished as the final resting place of Helen Hunt Jackson, and the Garden of the Gods, where the monoliths and curious figures receive appropriate names.

The thermal springs, the falls and cascades, the caves and canons, are all objects of interest.

About one-third of Colorado is under cultivation., which is carried on by a system of irrigation. This State is particularly rich in mineral resources.

DENVER.

Denver is the metropolis and wealthiest city of Colorado. It is almost one mile above the sea level.

The city is metropolitan in every respect. Its massive business blocks, its noble public buildings, its universities and schools, its elegant hotels and private residences, are indicative of intelligence, wealth, and good government.

As a manufacturing and railroad center it leads any other city in the State. The sewerage is perfect, the water supply abundant, the climate healthful and delightful, and the scenery is magnificent.

The Capital, the United States Mint, the Union Depot, the

Opera House, and other buildings, are a few of the noted attractions of the "Queen City of the Plains."

PUEBLO.

Pueblo is the center of the corn, wheat and fruit producing valley of the Arkansas in Colorado.

The largest steel and iron works west of the Missouri River, are at Pueblo. It is the seat of several large smelting establishments, foundries and machine shops, where miners' tools are manufactured. It is in the midst of the famous coal fields, and near the petroleum region, from which a pipe line is laid to the city.

The Colorado Mineral Palace, a permanent exhibition of the minerals of the State, is located here.

Pueblo has several artesian wells, which have gained the reputation of curative powers. The water is shipped to different parts of the United States.

LEADVILLE,

A famous mining town, is a little over 100 miles southwest of Denver. Gold was discovered here in 1860, and for awhile great excitement prevailed, and the place was thronged with miners from far and near. It still has valuable mines of silver, gold and lead, that are thoroughly worked. The population has been decreasing slowly of late years.

OURAY.

Ouray, "Gem of the Rockies," is in southwest Colorado. Its altitude is over 7,000 feet. Its hot springs have a temperature of 140° Fahr. There has been no city tax levied since 1883.

It is a resort for invalids, and the seat of a miners' hospital.

COLORADO SPRINGS.

Colorado Springs is a noted health resort and starting place from which to view the wonders of Colorado. It is the seat of the Mining Institute, the Colorado College, and the Institute for Deaf Mutes.

From this city to the summit of Pike's Peak is 16 miles ; to Manitou Springs, 5 miles ; to the "Garden of the Gods," 4 miles ; Monument Park, 8 miles ; and Glen Eyrie, 5 miles.

PIKE'S PEAK SIGNAL STATION.

"Old Probabilities," as the weather manufactory is called sometimes, is occasionally a little erratic.

There are over 1,200 stations under the charge of men belonging to the United States Signal Corps.

An outfit at each station consists of a barometer, thermometer, hygrometer, anemometer, weather vane and a rain gauge, with the necessary household effects for living. Three times each day : at 7:35 A. M., 4:35 P. M., and 11:35 P. M., Washington time, the reports are telegraphed to Washington, where the bulletins are made up an hour and twenty-five minutes after the observations are made. For reliable weather prophesy, four facts must be known, viz.: The weight, the temperature, the humidity, and the direction and velocity of the air.

The station on the summit of Pike's Peak is the highest in the United States. It is 14,157 feet above the sea level, surrounded by perpetual snow, and in a region where many of the severest storms originate.

Water freezes here every night in the year, and snow storms are not unusual in July and August.

The house has walls two feet thick. There are several rooms—one for instruments, one for sleeping, two for store rooms, and one for a kitchen.

The roof is anchored by great cables, to brace it against the wind, which sometimes blows 100 miles per hour. Six months' provisions and food are taken up every fall.

The view is magnificent—150 miles distant Spanish Peaks glisten in the sun—Denver and Pueblo can be located by their smoke.

Pike's Peak is the highest mountain known where civilized people live all the year round.

It was named after its discoverer, Zebulon W. Pike, who was killed by an explosion at Toronto, during the War of 1812.

With his head resting on the flag he ended a life of usefulness, of heroism and honor. This peak may be said to be his monument.

NEW MEXICO.

New Mexico Ty.
"Old Curiosity Shop."

{	Location.	
	Comparative size.	
	Rivers.	{ Rio Grande. Pecos. Canadian.
	Cities.	{ Santa Fe. Las Vegas. Albuquerque.
	List of Products.	

ITEMS OF INTEREST.

LAS VEGAS,

An important town of New Mexico, is located about 50 miles southeast of Santa Fe, on the Gallinas River.

The Las Vegas Hot Springs, about 6 miles northwest of the city, is a popular resort.

Good building stone of various colors, and heavy forests of excellent timber, are near at hand.

SANTA FE, *Cabezas-1522.*

The capital of New Mexico, and one of the oldest towns in the United States, is built on both sides of the Santa Fe Creek, about 15 miles from Rio Grande.

When first visited by the Spaniards, about 1540, it was the site of a populous Indian pueblo (town). The rich gold mines in the vicinity were worked by the Spaniards until 1680, when the Indians drove them away and filled up the mines with rubbish. The Spaniards were, 25 years afterwards, allowed to return, only upon the condition that they should not work at mining.

Nearly all of the houses are built of *adobe*, or sun dried brick, and are but one story high.

Over 70 per cent. of the population consists of Mexicans, and Spanish is the prevailing language. Santa Fe has a very healthful and delightful climate.

IRRIGATION.

The first attempts at irrigation in this country were made in New Mexico and Arizona by the aboriginal inhabitants.

The work of reclaiming from 3,000,000 to 4,000,000 acres, is now in progress in the Rio Grande and Pecos River valleys. It is estimated that 60,000,000 acres of agricultural land, including much of what is known as the "Staked Plains," can be reclaimed by storing water in reservoirs from these rivers.

This is an excellent subject for investigation, but our space forbids. The region west of the 100° meridian may be made to bloom, and the near future may see such irrigation that will rival that of the ancient Babylonians and Arabians.

ZUNI.

The Zuni village of the Pueblo Indians is built in a sheltered nook of a desert country. The houses are all connected and built up in terraces, and entered by means of ladders. In order to find out about these strange people, Mr. Frank Cushing went to live with them. He was adopted as a son, and was finally made one of the war chiefs.

Through him many of these facts have been made public. He found these people very pleasant and peaceful. Agriculture is their main pursuit. Their great building now has about 1,600 inhabitants, but at one time must have contained upwards of 5,000.

In the center of the large council room is a square stone box, where the sacred fire is kept continually burning. Here the Priests of the "Order of the Bow" meet.

Their history and tradition are handed down, orally, through four chosen persons.

Mr. Cushing, who was sent out by the Smithsonian Institute, relates many of the curious customs and religious traditions of this remarkable and wonderful people. A book, "The Land of the Pueblos," by Mrs. Susan E. Wallace, gives considerable information on this subject.

It is said that 6,000 square miles of territory are covered with these adobe dwellings.

ARIZONA TERRITORY.

Arizona Ty.	{	Location.	
		Rivers.	{ Colorado.
			Gila.
			{ Little Colorado.
	{	Colorado Plateau.	
		Cities.	{ Phoenix.
			Tucson.
			Prescott.
			{ Tombstone.
	{	Products.	

ITEMS OF INTEREST.

PHŒNIX,

The capital of Arizona, is located in the southern part, on Salt River. By means of irrigation, this valley that once was an arid waste, has been made to "blossom as the rose."

The soil and climate are especially well suited for the production of semi-tropical fruits. Oranges, lemons, bananas, olives and grapes, both for wine and for raisins, are profitably cultivated.

Commerce is the principal business of the city

A PETRIFIED FOREST.

The visitor to the petrified forest near Corrizo, on the Little Colorado, will begin to see the signs of petrification hours before he reaches the wonder ; here and there, almost every step in the road, small pieces of detached limbs and larger stumps may be seen, almost hidden in the white sand. The road, at a distance of ten miles from Corrizo, enters an immense basin, the slope being a semi-circle, and this enclosed by high banks of shale, and white, fine clay.

The petrified stumps, limbs, and, in fact, whole trees, lie about on all sides. The action of the waters for hundreds of years has gradually washed away the high hills round about, and the trees that once covered the high table lands now lie in the valley beneath. Immense trunks, some of which will measure five feet in diameter, are broken and scattered over a surface of 300 acres. Limbs and twigs cover the sand in every direction, and the visitor is puzzled as to where he shall begin to gather the beautiful specimens that lie within easy reach. There are numerous blocks or trunks of this petrified wood that have the appearance, for all the world, of having just been cut down by the woodman's ax, and the chips are thrown around on the ground so that one can instinctively pick them up, as he would in the log camps of Michigan and Pennsylvania.

Many of the small particles, and even the whole heart of some trees have now become thoroughly crystalized, and the beautiful colored cakes sparkle in the sunshine like so many diamonds. Every color of the rainbow is duplicated in these crystals, and those of an amethyst color would pass the eye of a novice for a real stone. The grain of the wood is plainly shown in nearly every specimen—making the pieces more beautiful than ever.

YUMA'S

Great canal is the most gigantic enterprise as yet taken in hand in Arizona. To tunnel through a hill or mountain side, so as to take water of the Colorado, without damaging the stream, which is the present plan, and that recommended by the English irrigation engineers, then to bring the water down on both sides of the river, with an aqueduct across the Gila, so as to irrigate the 2,000,000 acres of rich

land lying adjacent to Yuma, in Arizona, California, Sonora, and Lower California ; in fact, to build this canal 90 miles in length, 100 feet is width at the bottom, and 12 feet deep, is not the work of an hour, nor the task of a child, and yet this is but the outline of this great work, all of which is going to be done, and that, too, in the near future.

THE GRAND CANONS.

These canons are the most wonderful example of erosion of rivers known.

The description of them may be found in so many books, hence it is omitted for want of space.

J. W. Powell, of the Geological Survey, gives a grand description of the Colorado canons.

A CURIOUS LAKE.

Southwest of Yuma, Arizona, there exists a curious and wonderful lake. The water is, to all appearances, jet black, yet it does not color the skin of the bathers.

A white cloth dipped in the lake is colored black, but upon closer examination, it is found to be a black substance which adheres to the cloth. A ten or fifteen minutes' bath is so exhilarating as to make one feel as if under the influence of brandy. This place is a great health resort of the Indians for fever, rheumatism and other diseases. The Indians place their invalids in the hot volcanic mud, up to their necks, for half an hour, then they are washed in the lake, after which they are rolled in blankets and placed in the hot sands to sweat.

They are next removed to a suitable place and left to sleep. The remarkable cures are as unfailing to the white people as to the Indians.

INDIAN TERRITORY.

ITEMS OF INTEREST.

TRIBES.	CAPITALS.
Cherokees,	Tahlequah.
Chickasaws,	Tishemingo.
Choctaws,	Armstrong.
Creeks,	Ocmulgee.
Seminoles,	Wewoka.

These five tribes are known as civilized Indians. They have schools, churches, newspapers, and laws of their own.

Some of them are very industrious, and even wealthy.

Some of these Indians once owned slaves, and even engaged in the Southern Confederacy.

The war left them stripped of nearly everything, and having borne arms against the Union, their treaties were forfeited. New treaties were made with them after the war, permitting them to still own the same tracts as before, but they were to free their slaves (6,000), and to permit other Indians to settle on portions of their land.

A narrow strip of timber, known as "Cross Timbers," stretches across the Territory.

Their chief occupation is agriculture, and many of them do as well as the white people.

The remnants of over 30 small tribes are also located in this Indian country.

The total population is not far from 75,000 to 80,000 Indians.

OKLAHOMA TERRITORY.

Oklahoma. "Beautiful Land."	{	Boundary.
		Comparative size.
	{	Rivers.
		Arkansas.
		Canadian.
		Cimmoran.
		Red.
	Wichita Mountains.	
	{	Cities.
		Guthrie.
	{ Oklahoma City.	
	{ Products.	

ITEMS OF INTEREST.

NO MAN'S LAND.

This strip of land, $33\frac{1}{2}$ miles wide by 167 miles long, was once a portion of Texas, known as the Texas Panhandle.

When Texas became a State, because it was to be a slave State, it became necessary to relinquish that part north of $36^{\circ} 30'$ to conform to the agreement between the free and slave States, known as the Missouri Compromise. For years this strip was without the control of law, and until recently it formed no part of Uncle Sam's estate. It is very fertile and well watered. It has a delightful climate, and valuable coal deposits. There are thousands of settlers here without any other claim to the land than squatters' rights.

These people have formed a kind of government of their own, and peace and order have prevailed.

They petitioned Congress to give them a territorial government, and now they are included in the Oklahoma Territory. It is called The Panhandle of Oklahoma Territory.

In 1830 the President of the United States was authorized to set apart a certain tract of land for the use of Indians who had formerly lived east of the Mississippi River. The greater part of the land was given to Cherokees, Choctaws, Chickasaws, Creek and Seminole tribes. The Government solemnly agreed that this territory should be theirs forever, and free from the laws of any State or Territory.

The Creeks traded part of their land to the Seminoles, who in turn sold it to the United States Government for 15 cents per acre, in order that other Indians might be located in this territory. A portion of this tract, owned by the United States, was not occupied by the Indians, and thus the foundation of Oklahoma laid. In 1860 7,000,000 acres, known as the Cherokee Country, was purchased of the Indians, and added to Oklahoma.

ALASKA TERRITORY.

Alaska Territory.	{	Location.	
		Latitude and Longitude.	
		Size.	
		Oceans.	{ Arctic. Pacific.
		Bering's Sea.	
		Bristol Bay.	
		Bering's Strait.	
		Rivers.	{ Yukon. Porcupine.
		Alaskan Mountains.	
		Peaks.	{ St. Elias. Fairweather.
		Capes.	{ Cape Prince of Wales. Point Barrow.
		Alaska Peninsula.	
		Islands.	{ St. Lawrence. St. Paul. Baranoff. Pribyloff.
		City of Sitka.	
		Products.	{ Fur. Fish. Timber. Minerals.

ITEMS OF INTEREST.

The area of Alaska is 580,000 square miles, or as large as that part of the United States lying east of the Mississippi River, north of Georgia and the Carolinas. The coast line of Alaska is long enough to reach around the world.

From an eastern to a western limit of Alaska, it is as far as New York is from San Francisco.

Alaska is the great island region of the United States. Alexander Archipelago alone contains 5,000 separate islands. The area of the islands of Alaska would make a State as large as Maine.

Alaska contains the great volcanic system and the great glacier region of the United States. On one occasion, Secretary Seward was asked what he considered his most important official act. His reply was: "The purchase of Alaska." He further stated that the people of the United States didn't appreciate the magnitude of the purchase, and perhaps wouldn't for fifty years.

Alaska is the great reserve lumber region of the United States. There are thousands of square miles of yellow cedar, hemlock, spruce, and balsam fir.

The mineral wealth is known to be immense, and yet it is comparatively undeveloped. It is said that Alaska could supply the entire country with salmon, cod and herring, and other kinds of fish.

The fur bearing land animals are: bear, otter, beaver, mink, lynx, marten and others. The most valuable whale fisheries are off the coast of Alaska.

The population is about 30,000.

JAPAN-CURRENT.

The remarkable fact that southeastern Alaska has had a winter temperature similar to that of Tennessee, and a summer temperature like that of Wisconsin, is due to the genial influence of the warm Japan Current. This current, similar in many respects to the Gulf Stream of the Atlantic Ocean, is smaller, slower and cooler than the Gulf Stream. The average temperature of its surface waters, in summer,

is about 70° Fahr., and in winter, about 63°. The current originates in the vicinity of the Indian Archipelago, and flows in a northeasterly direction past Japan. Upon reaching the Aleutian Archipelago it is deflected eastward, and flows south along the west shore of North America. No part of it flows through Bering's Strait. Thus it is that the western coast of North America has a milder climate than countries of the same latitude on the eastern coast.

SITKA.

Sitka, the chief town of Alaska, is situated on the Baranoff Island, one of the Alexander Archipelago.

There are about 1,000 residents. This place has a greater rainfall than any other locality in the United States. In four different years, within the last 45 years, the thermometer registered lower than zero, and in seven different years, higher than 80°, Fahr. Steamers ply between Portland and Sitka. Coal is found near here. The entire commerce consists of furs and fish.

The Greek Church is the religion of the inhabitants.

The Government Land Office and all territorial offices are located at Sitka.

YUKON RIVER.

The Yukon is the largest river of America flowing into the Pacific Ocean.

It has five mouths and is navigable for nearly 1,500 miles. There are no obstructions in this river, but some of its tributaries have canons with perpendicular walls 1,000 feet high.

The pass of the Yukon River through the mountains presents a grand view. The river's current is deep and very swift.

CAVE DWELLERS.

South of Cape Prince of Wales, there is an island where the "Cave Dwellers" of the present live. The rocky sides of the island rise 700 feet above the ocean, and on one side, where the slope is about 45 degrees, the Innuits have excavated homes in the rocks.

There are forty of these cliff dwellings.

These people are noted for the making of water-proof boots from the skins of the seals.

ALASKAN MOUNTAINS.

This range of mountains extends nearly east and west through the Alaskan peninsula. This same range extends into the ocean, and their tops form the Aleutian Islands.

Over sixty volcanoes are found in these mountains; many of them are active. In one of the extinct craters is found a vast boiling mineral spring, 18 miles in circumference.

The natives make use of this in cooking their food.

GLACIERS.

Glaciers are numerous in Alaska.

Mount Fairweather has a glacier that extends fifty miles to the sea, where it ends in a perpendicular ice wall, 300 feet high and eight miles wide. There is another glacier in a deep gulch, which is 40 miles long, 5 miles wide and 1,000 feet deep.

When these glaciers are broken off by the buoyant power of the water, they form immense icebergs.

FUR SEAL INDUSTRY.

This important industry is confined chiefly to the Pribyloff Islands, St. Paul and St. George, and was granted to

the Alaska Commercial Co., for the consideration of an annual rental of \$55,000 for the islands, and a royalty of \$262,500 on the 100,000 seal skins, which, by law, are allowed to be taken each year. The hunting and killing take place principally in the months of June and July. Natives are employed to do the killing, which they do by means of clubs. The use of fire-arms is not permitted, for fear of frightening away the seals. Great care is taken that the supply shall not fail. None of the female nor young seals are disturbed; only what are termed the "bachelor" seals are killed. Those in the best position to know the facts, confidently affirm that so long as the present restrictions are observed, there is no danger of the fur-bearing seals being exterminated.

A REINDEER FARM.

The United States Government has appointed a retired army officer to go to St. Lawrence Island, in the Bering Sea, to take charge of a station about to be established there. The Interior Department desires to have a station on this island, and begin the breeding of reindeer for the Innuits and Esquimaux to use, instead of dogs. It is the purpose of the Government to import reindeer from Siberia to the island, and a number of Siberians with them, to teach the natives how to raise and care for the animals. A reindeer park will be established, and as soon as the animals are obtained in sufficient numbers, some of them will be taken to Alaska and distributed among the people in that country, and thus the dogs, now used for sledging in the United States' Arctic possessions, will be displaced by deer, which will form nutritious food in case of emergency, whereas dogs do not furnish the most palatable meat. St. Lawrence Island is about thirty-six miles from the coast of Asia, and about

fifty from Alaska, in Bering Sea. An Episcopal Mission School will be established there, and sustained under the protection of the Government.

SUGGESTIVE KEY WORDS.

- 442. Horse Tail.
- 443. Pillars of Hercules.
- 444. Candle Fish.
- 445. Fifty-four Forty, or Fight.
- 446. The Great Divide.
- 447. Snow Slides.
- 448. Snow Sheds.
- 449. The Garden Spot of Washington.
- 450. Sage Plains.
- 451. Gentiles.
- 452. Avenging Angels.
- 453. Mountain Meadow Massacre.
- 454. City of the Saints.
- 455. The Gila Monster.
- 456. Casa Grande.
- 457. Muddy Salt Mine.
- 458. The Gates of the Rocky Mountains.
- 459. Mountain Passes.
- 460. Mirage.
- 461. Lightning Tubes.
- 462. The Devil's Slide.
- 463. Cherokee Outlet.
- 464. Oklahoma Boomers.
- 465. Ancient Pueblos.
- 466. The Cliff Dwellers.
- 467. Path-Finder of the Rockies.
- 468. The Sound City.

- 469. Russian America.
- 470. Refrigerator of the United States.
- 471. Seal Rookeries.
- 472. Northwest Passage.
- 473. Land of Desolation.
- 474. Arctic Explorers.
- 475. Pan American Congress.

ADDITIONAL QUERIES.

- 481. What city formerly supposed to be in Washington is now in Idaho?
- 482. To whom does Vancouver Island belong?
- 483. In what State do women have the right of suffrage guaranteed in the Constitution of the State?
- 484. Where is there a cave of pure alabaster found?
- 485. Which Territory has the hottest climate?
- 486. What city is slowly moving down a mountain side?
- 487. What city of once several thousand people is now almost deserted?
- 488. Which of the Western States has been decreasing in population?
- 489. Are there fogs along the Pacific coast?
- 490. Where is the largest cattle market in the West?
- 491. What are the mottoes of the last six new States?
- 492. What is the Desert Land Law?
- 493. Why has Utah's admission as a State been denied?
- 494. How is it proposed to reclaim the Colorado desert?
- 495. Where are the largest Cattle ranches in the United States?
- 496. What city did the Indians call "The Dancing Ground of the Sun?"
- 497. What tribes of Indians are the most savage?

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498. Of what use is the cactus?
499. What State has vast deposits of salt petre?
500. What is the Indian population of the United States?
501. Who are a few of the great writers of Western scenes and stories?
502. Are the slopes of the Rocky Mountains covered with timber?
503. What was called "Seward's Folly?"
504. What is the most western point of the United States? Most northern?
505. To what race of people do the natives of Alaska belong?
506. Which hemisphere includes Iceland?
507. How is it expected to connect Europe and America by railroad?
508. How wide is Bering's Strait?
509. Which direction does the current flow?
510. What is the metropolis of Alaska?
511. What is the most northern town in the world?
512. Are the shores of Greenland slowly rising or sinking?
513. What evidences are there that Greenland once had a tropical climate?
514. What causes the fogs off the coast of Newfoundland?
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DOMINION OF CANADA AND NEWFOUNDLAND.

Dominion of Canada and Newfoundland.	{ Location.	
	{ Area. Comparative size.	
	{ Population.	
	Oceans.	{ Atlantic. Pacific. Arctic.
	Bays.	{ Hudson. Baffin's. St. Lawrence. Fundy. James. Georgian.
	Straits.	{ Belle Isle. Hudson. Davis. Juan de Fuca.
	Lakes.	{ Great Bear. Great Slave. Winnipeg. Lake of the Woods. 4 Great Lakes.
	Rivers.	{ Mackenzie. Nelson. Red River of the North. St. Lawrence. Ottawa.
	{ General Divisions.	
	Peninsula.	{ Labrador. Nova Scotia.

OTTAWA.

Ottawa, or Bytown, as it was first called, in honor of its founder, Colonel By, is the capital of the Dominion of Canada.

It is located on the right bank of the Ottawa River, and is divided into upper and lower towns by the Rideau canal. This canal connects Ottawa with Kingston.

The Government buildings are large and beautiful structures, and the principal objects of interest to the tourist.

The lumber trade is the most important industry. The city also has many manufactures of various kinds, which utilize the excellent water power furnished by the Chaudiere falls, 40 feet in height.

TORONTO.

Toronto, originally called York, is the capital of Ontario, and is situated on the north shore of Lake Ontario.

It is famous for its elegant public buildings and excellent educational institutions. Among the latter may be mentioned: The University of Toronto, Trinity University, McMaster's Hall, Knox's College, Trinity Medical School, Woman's Medical School, School of Practical Science, Normal School, etc., etc. Toronto has excellent railroad facilities and extensive manufactories.

QUEBEC.

Quebec, the capital of the Province of Quebec, is picturesquely located on the left bank of the St. Lawrence River, about 400 miles from its mouth. From its almost impregnable fortress, it is sometimes called "The Gibraltar of America."

Ship building, the manufacture of lumber, and of boots and shoes, are the principal occupations.

It would be well, at this time, to refer to the capture of Quebec, by the English, in 1759.

MONTREAL,

Montreal (Mount Royal), the metropolis of Canada, is built on the south side of the island of Montreal at the confluence of the Ottawa and St. Lawrence rivers. It is at the head of ocean navigation on the St. Lawrence. Since it has been reached by a railway, it has been growing rapidly. It is noted for being the seat of a large number of public benevolent institutions, 'such as 'asylums, orphans' homes, etc. Manufacturing and commerce are the leading industries.

KINGSTON

is a thriving city on Lake Ontario. It is the seat of a Military College and is sometimes called the West Point of Canada. The Thousand Islands begin near Kingston and afford a popular summer resort.

The manufacture of ships, engines, locomotives and cars is carried on extensively at this place.

VICTORIA,

the capital of the Province of British Columbia, is pleasantly located on the southern extremity of Vancouver's Island. It has a good harbor. It has a delightful climate. The principal articles of export are gold, coal, timber, dried fish and furs.

WINNIPEG,

the capital of Manitoba and commercial metropolis of western Canada, is situated on the left bank of the Red River of the North and has had a remarkably rapid growth.

Up to the year of 1870, it was simply a trading post of the Hudson Bay Fur Company.

The country around Winnipeg received considerable advertisement at that time by the troops who were sent there to quell an insurrection among the half-breeds.

An extensive, fertile tract of country surrounds Winnipeg, valuable forests are near at hand, navigable rivers extend north, west and south, and its railways connect it with all important points.

HALIFAX.

Halifax, the capital and metropolis of Nova Scotia, is located about midway of the province on the southern coast.

Its harbor is one of the largest and best in the world. It is the principal American naval station of Great Britain and is protected by immense fortifications. It is the seat of the British military headquarters in America. Halifax has several good colleges and many benevolent institutions, such as asylums for the insane, deaf and dumb and blind, Orphans' Home, Home for the Aged, Women's Home, Infants' Home, Victoria Hospital, etc.

Its healthful location, beautiful scenery and historic associations make it a desirable place to visit.

ST. JOHN,

an important seaport of New Brunswick, is situated on the Bay of Fundy, at the mouth of the St. John's River. It has a good harbor and an extensive trade both with the United States and England. No other Canadian port owns so many ships as St. John.

The principal articles of manufacture and export are lumber and lime.

FREDERICKTON,

the capital of New Brunswick, is located at the head of navigation for large vessels on the St. John's River, about 85 miles from the Bay of Fundy.

The principal industries are the manufacture of lumber, lath, shingles and railroad ties.

NEWFOUNDLAND.

This large island, the nearest to Europe of the American islands, has an area of over 40,000 square miles. The population is not large and the interior of the island is unsettled. The principal settled portions are near the south and east coasts.

Newfoundland has no hills over 3,000 feet in height. It has a few large lakes and very many small ones.

The rivers are all short and unnavigable for steamers. The bays and harbors are numerous. Newfoundland has, owing to its insular position, a milder climate than there is on the adjacent continent. The forests border the lakes and streams and the trees are not very large.

The principal business of the inhabitants is fishing. The Grand Banks, east of Newfoundland, is an oceanic plateau about 600 miles long and 200 miles wide. The water on this plateau ranges from 60 to 1,000 feet in depth and swarms with fish, especially cod, herring and salmon.

The cod fishing lasts from June until November. The crops and vegetables produced are those common to the countries of the temperate zone.

The province of Newfoundland includes the island of Newfoundland and the region north of it, formerly called Labrador.

ST. JOHN'S,

the capital and principal city of Newfoundland, is situated on a peninsula in the most eastern part of Newfoundland. It has an excellent harbor. The entrance to the harbor, called "The Narrows," is so narrow that but one ship can enter at a time.

The principal trade is in furnishing supplies to the fishermen and in exporting fish, oil and seal.

DANISH AMERICA.

Danish America.	{	Latitude—Zones.
		Area—Population.
		Oceans. { Atlantic.
		{ Arctic.
		Baffin's Bay.
		Davis Strait.
		Islands. { Greenland.
		{ Iceland.
		{ Disco.
		Mount Hecla.
		Cape Farewell.
		Cities. { Lechenfels.
		{ Upernavik.
		{ Reikjavik.
	{	List of animals.

ITEMS OF INTEREST.

Greenland and Iceland are called Danish America.

Iceland was treated of in Book I, on pages 42 to 47 on Europe.

The climate of Greenland is severe, snow falls every month of the year. In the summer the sun never sets and during winter the sun is not seen for several months.

The *Aurora Borealis* is seen in greater splendor here than anywhere else in the world. Only the scantiest vegetation grows, such as mosses and lichens, which furnish food for reindeer, bears, etc.

The Esquimaux (Mongolians) live in Greenland. They live in houses made of ice and snow and subsist chiefly on whale and seal blubber.

LIFE IN GREENLAND.

The following is condensed from the talks of Miss Olof Krarer, a visitor from the polar regions, who has lectured in the United States.

She begins by telling that she was born in Greenland, that her height is just 40 inches, and in her country she would be a tall woman. Her father is just one inch taller and her brothers, sisters and mother are all shorter than she. She weighs 120 pounds.

They live in snow-houses, with rounded tops. They are six and a half feet in height, and as large as two good sized chambers. Thick, soft furs carpet the floors, and the one bed, in which all the family sleep, is also of fur. And the door, which leads out through a long, dark snow-passage to the outside, is hung with several fur curtains. As an instance of how cold it is inside the houses, Miss Krarer told us that when they are building them they fasten the fur carpets down by placing them under the snow wall, and as it never thaws in the hut, they never loosen their hold. The walls and roof of the hut are also covered with furs. They warm the furs in the fire and this melts the snow enough for them to get a firm hold on the walls and ceiling. There

is no furniture whatever in the house, no utensils, no stove, no dishes. They never cook anything, but eat raw, frozen, saltless meat and blubber, oil and blood. The only food they have is from the whale, the polar bear, the seal and the reindeer. The last-named animal is quite scarce, owing to the fact that there is very little of the moss upon which he feeds in Greenland. For a very young child they sometimes warm a bone in the blubber fire, and this is the nearest approach to cooking they make.

LIFE IN GREENLAND.

The children have no playthings and are not allowed to play or make any noise. Their parents command them to sit down and point out a place at the floor, and there they sit shivering until permission is given them to rise. From the constant habit of folding the arms to keep themselves warm, their arms are bowed at the elbows. The children are taught to be kind to one another and not to quarrel. If they are naughty their parents do not whip them, but instead put a piece of whalebone into the fire, and heat it until the fat begins to sizzle. Then they brand them with it, never, however, on the face. It is a cruel punishment, and, of course, very much dreaded. Miss Krarer still carries a mark made in this way.

When a boy is fifteen his father gives him a sleigh and a reindeer, but if he uses them to go sleigh-riding, coasting down hill and the like, instead of hunting, they are taken away from him. All fun seems to be left out of their lives.

A girl never goes out of the hut except with her parents until she is married. There is no "keeping company" of little boys and girls and young men and maidens, no parties from which they do not return until one and three A. M.

When a man wants a wife, he steals her from her home. If he is caught her parents kill him. But if he succeeds in reaching his hut in safety with his bride he is considered a smart and promising young man. That is all the romance there is to marriage. There is no other ceremony, but he must live with her ever afterward. A man who deserts his wife is killed; and these are the only offenses for which the death penalty is inflicted. The people do not lie or steal or quarrel and are very quiet. They do not talk much, having very little to talk about, and almost no ideas.

They have no money; the primitive custom of borrowing and lending prevails, and is sufficient for all their needs. The people are very kind and ready to lend everything they have. There are no rulers, ministers, lawyers or classes of any kind in Greenland. The only distinction is rich and poor. The rich have flint to start their fires with and the poor have not, and that is all the difference between them.

They have no way of keeping time. Up in that frozen land the sun shines four months, then there is a month of twilight, then six months of darkness, again a month of twilight and so on. Oh, but it is a dreary land, nothing but snow and ice on every side! Miss Krarer said she did not know how it came to be called Greenland; she never saw anything green there. The nearest approach to green being the brown moss on which the reindeer feeds. Day or night it is equally dark in the hut, and the only light they have is from the blubber fire. They have no wood, and it is for light, not heat, that they have a fire. They have no heat but what the body gives. Such agony as they endure from the bitter cold we can form no idea of whatever.

They have absolutely no water, never wash themselves and never drink anything. If they are thirsty, which is seldom, since they have neither salt, sweets nor spices of any kind,

and since cold does not occasion thirst to any extent, they take a bit of snow in their mouths and let it melt. They never cut or comb their hair—in fact the only attention paid to the body is an occasional oiling. They cut their meat with a walrus tusk, and this is the only knife they possess. With it they mark out on the skins the patterns of their clothes and then tear them.

The people wear suits of sealskin when they are in the house, and when they go out they put on, in addition, suits of white polar bear skin with the fur turned out. Fur shoes, mittens, hood, and, in very cold weather, a fur covering for the face, with two holes for the eyes, complete their picturesque costume. In cold weather, before venturing out, the face is treated to a thick coat of grease, from half an inch to an inch in thickness, and over this the fur veil is tied. Babies wear the skin of very young seals, and are carried on their mother's back, as the Indian squaws carry their papooses, until they are two and a half years old. They must be very tiny, since their parents are so small.

The people grow very slowly, not attaining their full size until twenty-five. Few live to be over sixty, and are then apparently as old as people of ninety in this country. The prevailing disease is consumption, owing to the intense cold and the foul smoky air of the huts, which are never ventilated. Her mother died of this disease shortly after reaching Iceland.

"In my country," she said, "they pay no attention to the sick. They say spirits have them, and they hate them. All they will do is to throw them a piece of blubber as they would to a dog. If the sick people get well they are smart, if they die they are good, and they are just thrown into a hole in the snow. Their furs and spears are thrown in with them, and no matter how much they are needed the people

never go to get them back; for in my country, when men and women are dead we don't want any more to do with them."

The Greenlanders are heathens, and believe that if they are good they will at death be turned into spirits living in a nice warm land, but if bad they will be sent to a land colder even than Greenland.

When fifteen years of age she went to Iceland with her parents and her brothers and sisters. They went with a party of shipwrecked sailors and traveled over the frozen seas on sledges drawn by dogs a distance of 1,000 miles almost due south. So you see how far north she lived when Iceland was nearly 1,000 miles south. In Iceland she was taken into the Mission School and taught. Here she found a civilization and a state of society hitherto undreamed of by her.

She was a very black, dirty, repulsive object and the kind people gave her some soap to wash herself with. But not understanding its use she put it into her mouth. She was greatly surprised when she saw persons bathing and did not know what to make of it.

Her hair is a light brown and her complexion is neither fair nor dark. Her eyes are large and mild, and her face is rather heavy, but brightens when she smiles, and her general appearance is quite Teutonic. When she went to Iceland her face was as dark as an Indian's and her hair coal-black from smoke and grease. They have no chimneys in their houses and the smoke settles on everything. If anything touched her hair it received a black, greasy daub. Shortly after her arrival in the country she had a fever and her hair was cut off. Then, after repeated and vigorous washings with soap and water, the scalp became clean, and when her hair grew out it had its present color.

After a residence of five years in Iceland, during which she learned to speak the Icelandic language, she went to Manitoba, and thence to the United States via Wisconsin. In Wisconsin she lived in a room cooled with ice until she became acclimated.

UNITED STATES OF MEXICO.

"Italy of America." "Land of the Montezumas."	{	Latitude and Zone.
		Area and Population.
		Pacific Ocean.
		Caribbean Sea.
		Gulfs. { California. Mexico. Tehuantepec. Campeche.
		Lake Tescuco.
		Yucatan Channel.
		Rivers. { Rio Grande Colorado.
		Divisions 28.
		Peninsulas. { Lower California. Yucatan.
United States of Mexico. "Greasers."	{	Isthmus of Tehuantepec.
		Capes. { Corrientes. San Lucas.
		Mountains Sierra Madre.
		Peaks. { Popocatepetl. Iztaccihuatl.
		Cities. { Mexico. Vera Cruz. Matamoras. Tampico. Acapulco. Mazatlan.
		Products. { Animal. Vegetable. Mineral. Manufactured.

SUGGESTIVE KEY WORDS.

- 476. Cordilleras.
- 477. Tierra Calientes.
- 478. Tierra Templades.
- 479. Tierra Fria.
- 480. Venice of the Aztecs.
- 481. The Floating Gardens.
- 482. Calendar Stone.
- 483. The Pyramids.
- 484. Inquisition.
- 485. National Library.
- 486. Tehuantepec Canal.
- 487. Volcanoes.
- 488. Vermilion Sea.
- 489. Sacrificial Stone.
- 490. Plateau of Mexico.
- 491. Echoing Cave.
- 492. "Gulf of Cortes."
- 493. City of the True Cross.
- 494. Yellow Jack.
- 495. Maximilian.

QUERIES.

- 515. Why is navigation along the coast of Mexico dangerous?
- 516. How many mints in Mexico?
- 517. Who were the Toltecs?
- 518. What deity did the Aztecs worship?
- 519. When did Vera Cruz undergo sieges?
- 520. What are the principal amusements of the Mexicans?
- 521. Whom did the Aztecs call the White Gods?

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522. How did the Aztecs divide time ?
523. What became of the records of the Aztecs ?
524. At what city were thousands of human beings sacrificed annually ?
525. Which city is surrounded by a wall ?
526. What mineral is obtained from the crater of Popocatepetl ? How ?
527. Who wrote the "Conquest of Mexico?"
528. What names will ever remind us of the Aztecs ?
529. What are *Tortillas*? *Peons*?
530. Which is the most active volcano ?
531. Where are noted battlefields in Mexico ?
532. What are the prevalent diseases in this country ?
533. Who was the "Washington of Mexico?"
534. Make a good list of exports. Ditto imports.

ITEMS OF INTEREST.

THE CENTURY PLANT.

The *Agave Americana* or Century Plant, called *maguey* in South America, and *mezcal* in Mexico, attains its full growth in from ten to seventy years, according to climate and locality. The stem reaches a height of thirty to forty feet, sending out branches which are crowded with flowers. These flowers bloom but once, but continue to bloom for months ; when the blossoms fall the plant soon dies.

The agave furnished meat, drink, clothing and writing material for the Aztecs.

The Mexicans make *pulque*, the national beverage, from its sap, which, if distilled, becomes highly intoxicating.

SISAL HEMP.

Sisal grass, or pita flax, is a plant whose leaf fibers are used in making a coarse thread. The flower stems are used for thatching, and the thorns furnish a substitute for nails.

An extract from the leaves will lather with water like soap.

The pith of the stem makes a good hone for a razor. The fibers will make an excellent rope.

The leaves made the paper upon which the Aztecs kept their history.

FIRST PRINTING.

The first printing press set up in America was established in the City of Mexico, in 1536, under the direction of the first Mexican Viceroy, Mendoza. (See American Encyclopedia).

“The Spiritual Ladder,” a school manual, was printed over one hundred years before any printing in the United States. It is stated that ninety books were printed previous to 1600.

CONQUEST OF MEXICO.

Cortez found Mexico half conquered by an old tradition. It was taught in their temples, and believed by all, that a race of white men would come to rule them.

The Spaniards, clothed in arrow-proof garments, armed with fire bolts from Heaven, sealed the truth of this prediction, and the Mexicans bowed in helpless submission to the wonderful strangers.

POPULATION.

Of the 10,000,000 people three-fourths are Indians, two-thirds of whom cannot read or write, nor ever had an ancestor who could ; who never slept on a bed, or wore a stock-

ing, and who are accustomed to live at a less expense per day than a farm horse in any New England State.

COCHINEAL.

The cochineal insect is one of the staple products of Mexico. It lives on the cactus plant. It takes 70,000 of these insects, when dried, to make one pound of dye, yet the exports amount to millions of dollars. This dye is used in coloring silks and artificial flowers; also in making red ink (carmine) and rouge.

PYRAMIDS.

The great Pyramid of Cholula covers over forty acres.

The "House of the Sun," and "House of the Moon" each occupies over ten acres.

There are great numbers of these pyramids, and the country can truly be called "The Egypt of America."

A CURIOUS TREE.

Among the famous trees there is one called "El Arbol de los Manitos," or The Tree of the Little Hand." Very few of these trees exist. Its properties are medicinal, but its most remarkable features are that its flowers resemble a hand. The stamens form the wrist and palm, and then separate into five red fingers.

COZUMEL.

Cozumel, an island off the coast of Yucatan, is noted for its mines. The Mexicans made pilgrimages there to worship the idols in the temple, the ruins of which may still be seen.

MEXICAN INDIANS.

The Indian population numbers 6,000,000, one-half of which are nomadic tribes. Most of them are indolent, but

some of the tribes are skillful in the manufacture of clay and rag figures.

Their chief food consists of corn, pounded and made into a hard, flat cake, which is used for a plate, when anything else is eaten. These Indians boil a kind of fly, found in the marshes, pound it into a paste and then eat it. They eat water lizards and the larvæ of worms.

They are very loth to accept the better methods of the white people, and tenaciously hold to the customs of their ancestors.

Take short statements like the following, and require pupils to formulate questions to correspond to them:

Three-fourths of Mexico is a table land.

The Toltecs were noted for feather work.

Mexico uses the Metric System.

Lake Tezcuco is salt water. (Is this the highest salt water lake in the world?)

Mesquite roots, pine and coal blocks brought from Wales as ballast, are used as fuel for the railroads.

Mexico has two submarine telegraphs, one to Havana and the other to Galveston.

Cone shaped stones painted white are the legal land marks.

There is a peak called "Buffalo Mountain," from its fancied resemblance to that animal.

Everywhere may be seen small crosses stuck in the ground; these indicate where some one has gone to his eternal home.

The Gulf Stream passes through the Yucatan channel at a velocity of one mile in four hours. It is computed to be 1,000 fathoms deep. (How is depth ascertained?)

“Montezuma’s Cypress,” over fifty feet in circumference, is in the park which surrounds Chapultepec (Hill of the Grasshopper).

“Montezuma Cave,” where the ill-fated monarch made his escape, is still shown to the visitors of this castle.

The Hot Springs, at Aguas Calientes, furnish an abundant supply of water for bath houses, and a ditch has been walled up with stone, where the poorer classes of people obtain hot water for laundry purposes.

The Mexican Empire abounded in all kinds of paintings; paintings of history, maps, portraits of kings and queens; mythology, and the mysteries of their religion.

Under the name of vandalism and superstition, these were gathered into a heap and set on fire; thus perished in ashes the memory of many interesting and curious events.

ONE METHOD.

Place a list of words, like the following, on the board :

Indigo.	Cloves.
Chocolate.	Cinnamon.
Sarsaparilla.	Pepper.
Vanilla.	Mace.
Mahogany.	Allspice.
Vegetable ivory.	Cork.
Manioc.	Creosote.
Jalap.	Nutmeg.
Coffee.	Rubber.
Tea.	Tapioco.

These are all articles of commerce. Do you know from what part of the plant or tree they are obtained? Is it made from the Roots? Fruit? Sap? Leaves? Blossoms? Bark? Fiber?

Give use of each.

NOTE TO TEACHERS.

The reader will notice the absence of the descriptions of any cities of Mexico, while in the Dominion of Canada the items of interest are all towns.

This is intentional, for space will not permit descriptions of all cities and all objects of interest in all countries. Many of the descriptions omitted are important and should be dwelt upon by the teacher.

Those which are most easily found and generally known are not written.

CENTRAL AMERICA.

Central America.	{	Location.	
		Latitude and Longitude.	
		Pacific Ocean.	
		Caribbean Sea.	
		Gulfs.	{ Honduras.
			{ Mosquito.
		Lake Nicaragua.	
		San Juan River.	
		Divisions.	{ Balize.
			{ Guatemala.
			{ Honduras.
			{ San Salvador.
			{ Nicaragua.
			{ Costa Rica.
		Sierra Madre Mountains.	
		Volcanoes.	{ Agua.
			{ Fuego.
		Isthmus of Panama.	
		Cape—Gracias a Dios.	
		Cities.	{ New Guatemala.
			{ Balize.
			{ San Salvador.
			{ Tegucigalpa.
			{ Monagua.
			{ San Jose.
		Products.	{ Animal.
			{ Vegetable.
			{ Mineral.

ITEMS OF INTEREST.

BALIZE.

British Honduras or Balize is a colony of Great Britain. It is noted for the fine forests of Mahogany and other valuable woods. Cochineal, sugar and fruits are articles of commerce. The inhabitants are mostly blacks. The coast is low and swampy and the climate is very hot and unhealthful for white people.

Balize is the capital and it is said to be one of the cleanest cities of America. The streets are cleaned and kept in repair by prison convicts.

MAHOGANY TREE.

Mahogany trees are the most valuable of all the trees of the tropical forests.

This tree grows to a height of over 90 feet on the low lands and the wood is hard, close-grained and of a dark red color. It is used for cabinet purposes mainly. A single tree which cut three logs, 15 feet long by 38 inches square, sold for \$15,000.

A logging camp in this region is a novel sight. The men are limited in their daily tasks and are paid more or less accordingly as the limit of work is accomplished.

The work is done at night, owing to the extreme heat. The ox teams with their half-naked drivers, each of which carries a flaming torch, the clanking chains and the cracking of the whips in forests at midnight present a scene peculiar to this country alone.

GUATEMALA.

Guatemala is noted for its coffee, cocoa-nut, banana and pine-apple plantations. The luxuriant forests abound in cabinet and dye woods. The soil is very fertile.

In 1541 the City of Guatemala (old city) was destroyed by a torrent of hot water that burst from the mountain and deluged the adjacent plain, destroying the city and inhabitants.

Another city was built by the Spaniards, which exceeded in size and wealth any other of the Spanish capitals except the city of Mexico. This city existed 232 years, when an earthquake left its massive buildings in ruins, which remain to this day. New Guatemala, the present capital, contains a few industries and small factories. Its paved streets, its grand buildings and baths, its military barracks and public squares make it one of the finest cities of Latin America.

President Barrios has done much to improve the condition of this republic.

Copan, an ancient city of Guatemala, is noted for the wonderful ruins. The walls of a temple, 624 feet long, the colossal statues, the sculptured idols and altars, excited the wonder of the Spaniard, who failed to find any history of their origin.

HONDURAS.

This republic is mountainous and contains great mineral wealth of many kinds. It has some good agricultural land and dense forests of valuable timber. Sugar cane yields two or three crops in one year.

Tegucigalpa, the metropolis of Honduras, is situated on a lofty table land in the vicinity of gold, silver and copper mines.

SAN SAVADOR.

The smallest, but most populous of Central American republics is San Salvador. Coffee, tobacco, rubber and indigo are the staple articles of commerce.

Volcanic eruptions and earthquakes are of frequent occurrence.

San Salvador produces large quantities of the world-famous Balsam of Peru, which is collected by the Indians along what is known as the Balsam Coast. The chief city is San Salvador, which is surrounded by fine sugar and indigo plantations. This city has manufactures of various kinds and quite an extensive commerce. Education receives more attention here than elsewhere in Central America.

NICARAGUA.

Nicaragua is the largest of the Central American states.

This republic includes a strip of territory, known as the Mosquito Coast or Reservation.

Stock raising is an important industry. This country is the scene of Walker's filibustering scheme. Monagua, the capital, is built on the shores of Lake Nicaragua. Leon, the metropolis, is a Pacific port of entry, while Graytown is the principal eastern port.

The Nicaragua ship-canal, which has received a charter from the United States and right-of-way through Nicaragua, is attracting considerable attention.

COSTA RICA.

Costa Rica (rich coast) is the most southern of the Central American republics. Columbus landed here on his third voyage, and from a mountain top, Balboa, first saw the South Sea. The Atlantic slope is low and covered with dense forests, while the Pacific is comparatively high. The products, the people, the religion of all these republics are much alike. Pearls are found along the coasts. From Limon, a port of entry, great quantities of fruit are shipped to the United States.

The famous Spanish gold mine of Trinidad is within a few miles of Punta Arenas, a port of entry on the Pacific coast, which ships considerable indigo. Coffee is the staple article of production. San Jose is the capital.

WEST INDIES.

West Indies.	{ Location and zones.	
	Area and population.	
	Atlantic Ocean.	
	Caribbean Sea.	
	Gulf of Mexico.	
	Straits.	{ Florida.
		{ Yucatan.
		{ Windward.
		{ Mona.
	Greater Antilles.	{ Cuba.
		{ Hayti.
		{ Jamaica.
		{ Porto Rico.
	Lesser Antilles.	{ Leeward Islands.
		{ Windward Islands.
	Bahamas. (600).	
	Cities.	{ Havana.
		{ Matanzas.
		{ San Domingo.
		{ Kingston.
		{ San Juan.
		{ St. Thomas.
	Products.	{ Nassau.
		{ Animal.
		{ Vegetable.
		{ Mineral.

SUGGESTIVE KEY WORDS.

- 496. Queen of the Antilles.
- 497. Land of Springs.
- 498. Land of High Hills.
- 499. Caribs.
- 500. Arrow root.
- 501. Lightning Spring Beetle.
- 502. The Pearl of the Antilles.
- 503. West India Goods.
- 504. Bahama Banks.

QUERIES.

- 535. What is the oldest town in the New World?
- 536. Which island is noted for its marble?
- 537. What is rum? How made.
- 538. Name the most densely settled island in the world.
- 539. Where are the best cigars manufactured?
- 540. What island noted for the production of vegetables?
- 541. What nations own islands in the West Indies?
- 542. What island is noted for salt?
- 543. Does the United States own any of the West Indies?
If so, which Islands?
- 544. How is Cuba governed?
- 545. What seasons in the West Indies?

'ITEMS OF INTEREST.

THE BAHAMA ISLANDS.

The Bahama Archipelago consists of a chain of islands east of Florida, belonging to England. There are over 600 of them, but only about a dozen of them are inhabited. Much fruit is raised here. The climate is beneficial to consumptives.

The first land discovered by Columbus is in this group, but there is a difference of opinion as to which island. The Spaniards carried off the natives of these islands to work in the mines and pearl fisheries. In the more southern islands are natural salt ponds of great value. Spanish Wells, on an island of the same name, is one of the most curious spots of the entire region. The houses are built on high posts, to protect the people from the incursions of the wandering crabs, which live among the rocks, and move over the island at night in such vast numbers that they destroy every edible thing they can find.

The sub-marine gardens form a very interesting scene.

Far down in the clear, green water wave brilliant sea grass, sea fans, flowers and vines.

Through this marine shrubbery and the coral grottoes play many species of fish, from the golden minnow to ponderous fishes of 500 pounds weight. Conches and shell fish of all kinds abound.

NASSAU.

Nassau, the capital of the colony of the Bahamas, is built on the north side of New Providence Island. The city is a popular winter resort for invalids and pleasure seekers. The sponge trade is important. There are many objects of interest found in this locality. The caves, Banyan tree, palm trees, silk cotton tree, and the life plant. If a leaf of this plant be broken off and pinned to the wall, it will thrive and grow so rapidly as to produce shoots and leaves enough to cover the side of a large room. The harbor at Nassau was used by the Confederates as a stopping place for the blockade runners during the Rebellion.

BERMUDA ISLANDS.

These islands are located in vicinity of 32° north latitude, and 63° west longitude, or about 600 mi. east of South Carolina.

They are not included in the West Indies. but are controlled directly by the British crown.

St. George has an excellent harbor and is strongly fortified.

Dangerous coral reefs encircle these islands, except where the English have blasted an entrance to St. George's harbor.

The longest floating dock in the world is at Bermuda. It is 380 feet long and 123 feet in breadth.

The Bermuda Islands are noted for the vegetables produced.

There are no good wells nor fresh water streams here.

Rain water, collected in tanks, is the only source of drinking water. The houses are built of blocks of coral, which a single frost would cause to crumble.

CUBA.

Cuba is the most important colony of Spain, and the largest of the West India Islands—about the size of Pennsylvania.

The soil is fertile and products various. The island is rich in mineral resources and productions of the forests. Monkeys, alligators, lizards, turtles, birds and fishes of many species, tarantulas and scorpions, abound on this island.

The three great staple articles of Cuba are sugar, tobacco and rum.

Two crops of corn are matured here in one year.

Only once in the known history of Cuba has snow fallen, that of December 24-25, 1856. The climate is generally considered healthful.

King tells us that children go to school from 7 to 9 in the morning, and 4 to 6 in the evening. Owing to the warm weather there is no session in the middle of the day.

The heat causes terrible storms, called hurricanes, which do an immense amount of damage.

HAVANA.

Havana, the capital of Cuba and metropolis of the West Indies, is situated on one of the best harbors in the world, on the northwestern shore of the island. In foreign commerce it ranks next to New York.

It is the world's greatest sugar market, and has the name of producing the most celebrated cigars.

The city consists of the old or walled town, and the new one built beyond. It is strongly guarded by six forts.

Christopher Columbus reposed here nearly 100 years, until 1887, when his remains were placed on board an Italian ship, and conveyed to Genoa, with great ceremony.

There are numerous churches, convents, schools, and many public buildings in Havana.

HAYTI.

The Island of Hayti, formerly called Hispaniola, is composed of two independent States, the Republic of Hayti, in the west, and San Domingo, in the eastern part.

Mineral wealth abounds here, but at present it is undeveloped. Mineral springs and lakes are numerous.

The vegetation is of a tropical character. Coffee, cotton, sugar cane, tobacco, indigo and cocoa, are the chief articles of export. Turtles, lobsters, oysters and crabs, are common along the coast. Columbus founded Isabella, on the

north shore, in December, 1492. The Buccaneers infested this region in its early history.

The language of these republics is French, and religion Roman Catholic. Port au Prince is the capital of Hayti, and San Domingo of the eastern republic.

JAMAICA.

Jamaica is the largest of the British possessions in the West Indies. Hurricanes and earthquakes frequently occur.

The remains of one city, and all its inhabitants, lies 50 feet under the sea, the result of an earthquake.

The soil is not so fertile as the other islands, yet ground fruits are plentiful. The forest products are important.

Kingston, the capital, has a very large and commodious harbor.

WINDWARD ISLANDS.

BARBADOES is the most important of the Windward Islands. It belongs to England. Coral reefs almost encircle the island. Bridgetown is the capital, containing 20,000 people.

TRINIDAD, the largest of the group, is noted for its mud volcanoes and remarkable pitch lake. This lake is near the coast, and the pitch is hard at the sides, but in the center it is constantly boiling. Pitch is extensively exported.

MARGARITA and TORTUGA belong to Venezuela. They produce salt.

MARTINIQUE is a French possession. There are six distinct volcanoes on this island. Sugar, coffee, cotton and cocoa are produced.

St. Vincent has a volcano 3,000 feet high.

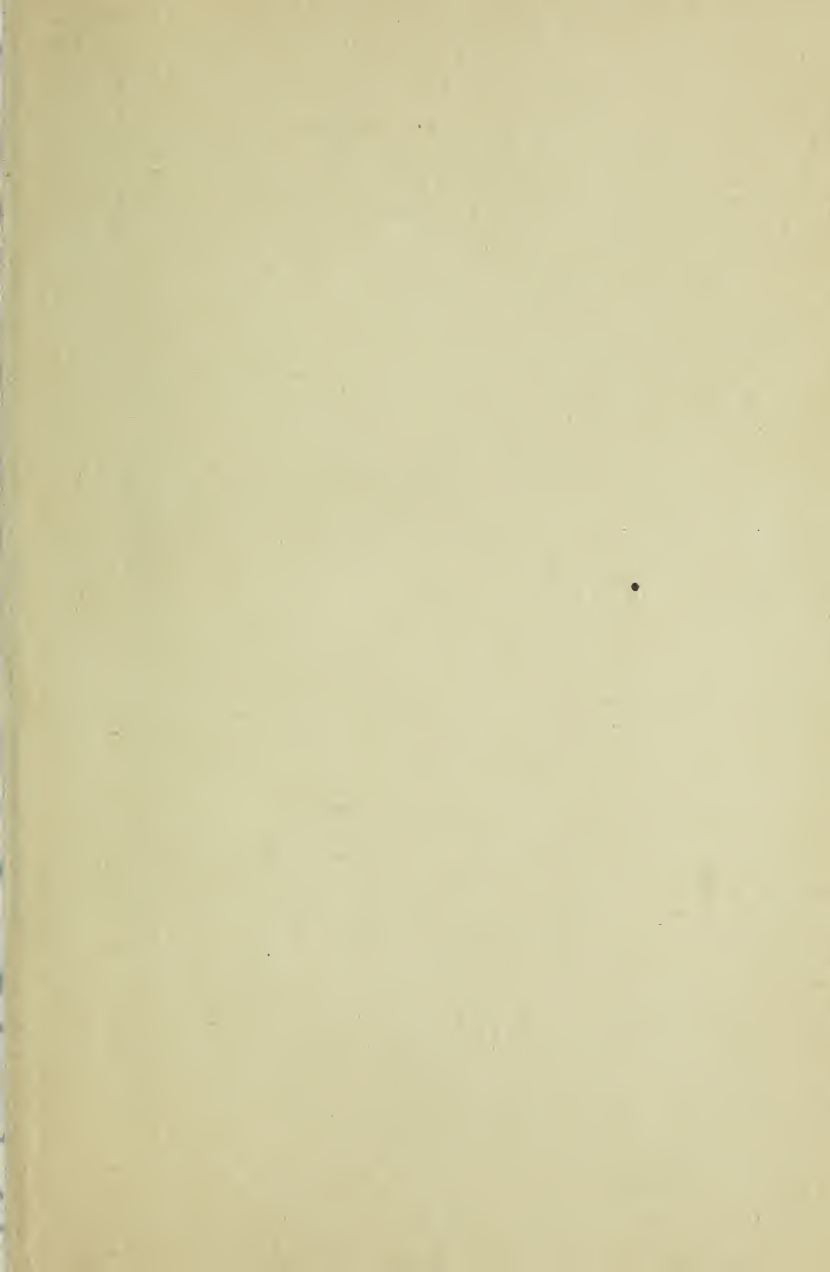
The crater is three miles in circumference and 500 feet deep.

LEEWARD ISLANDS.

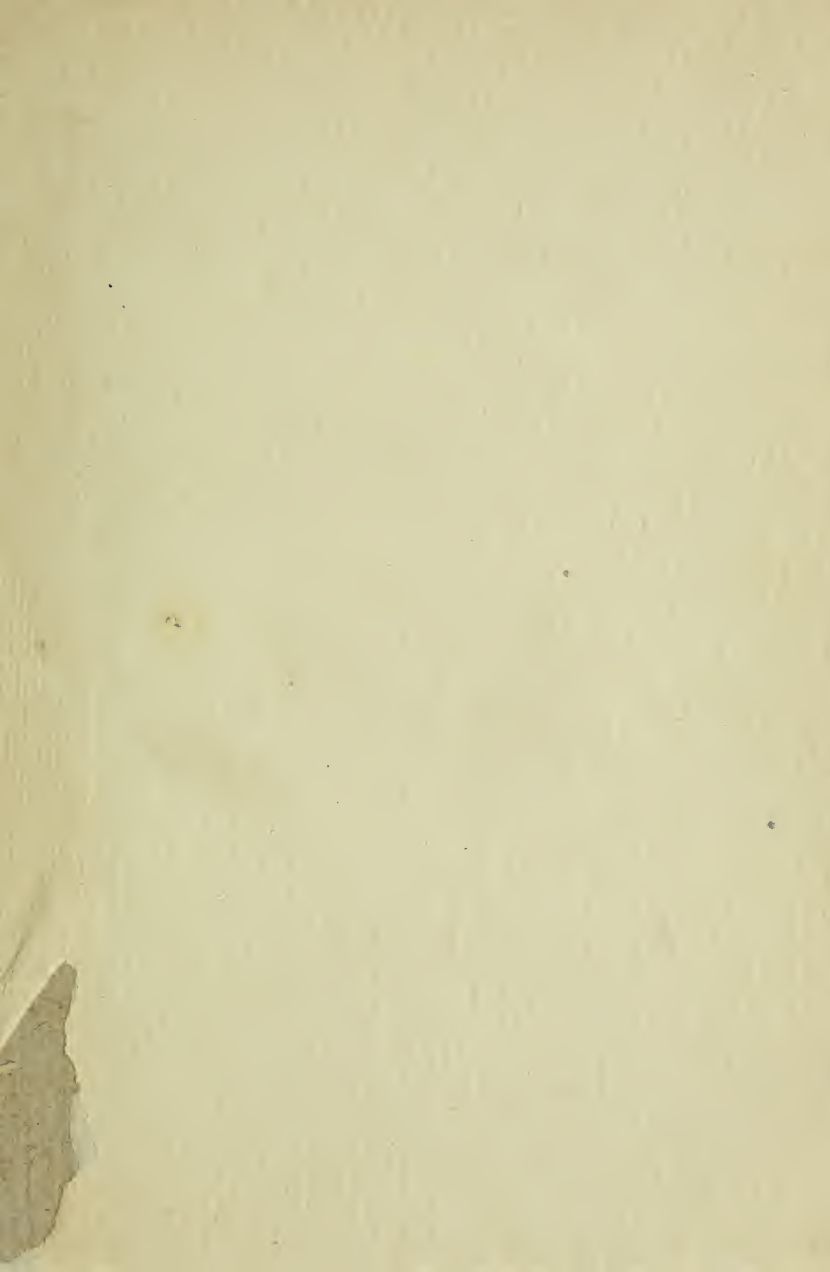
ST. THOMAS and ST. JOHN belong to Denmark. St. Thomas, the capital, is noted for being a free port. It has telegraph lines to the continent. The trade ~~is~~ extensive.

GUADALOUPE belongs to France, and exports are sent to that country.

VIRGIN ISLANDS are a group of upwards of 100 small islets belonging to different nations.







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